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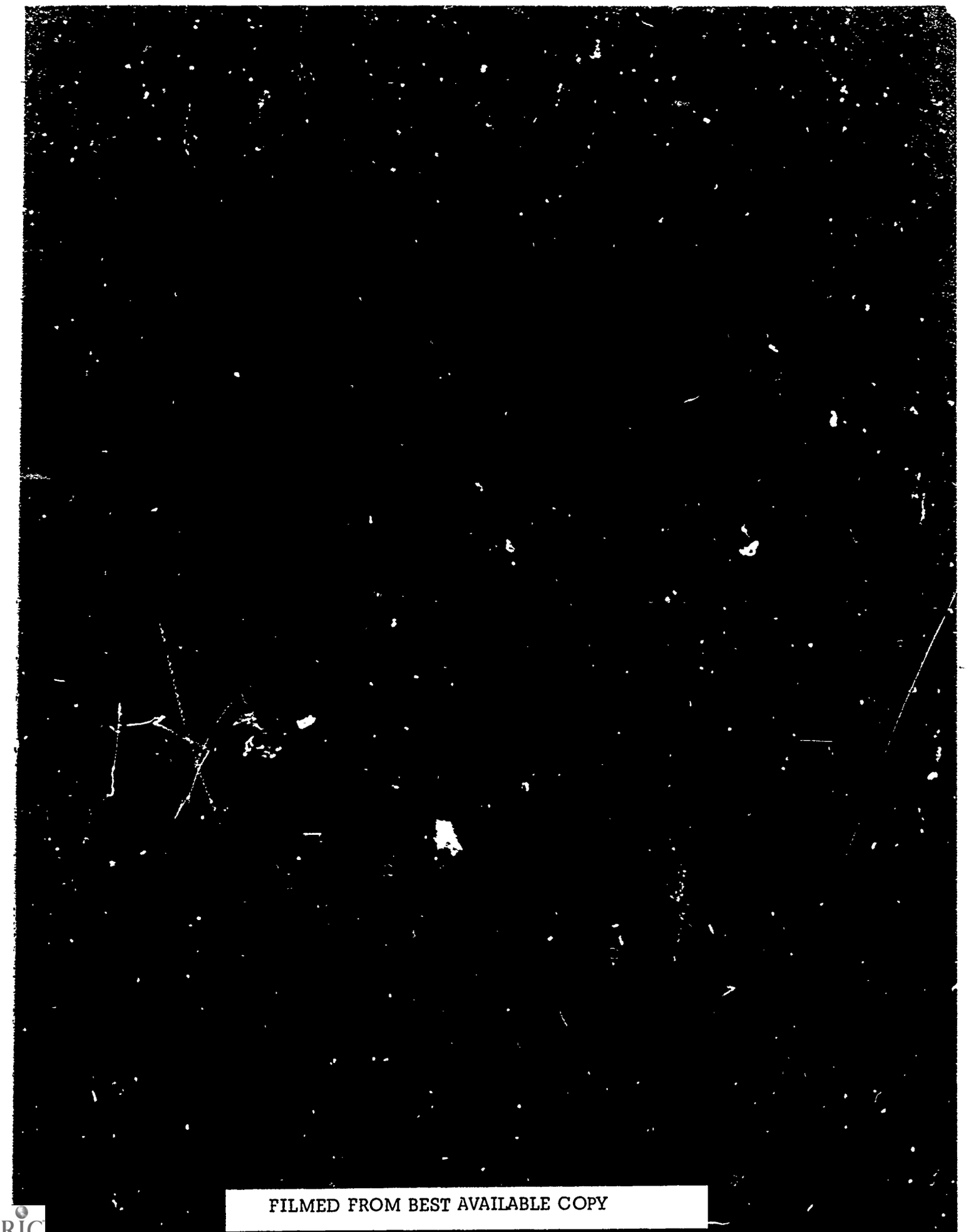
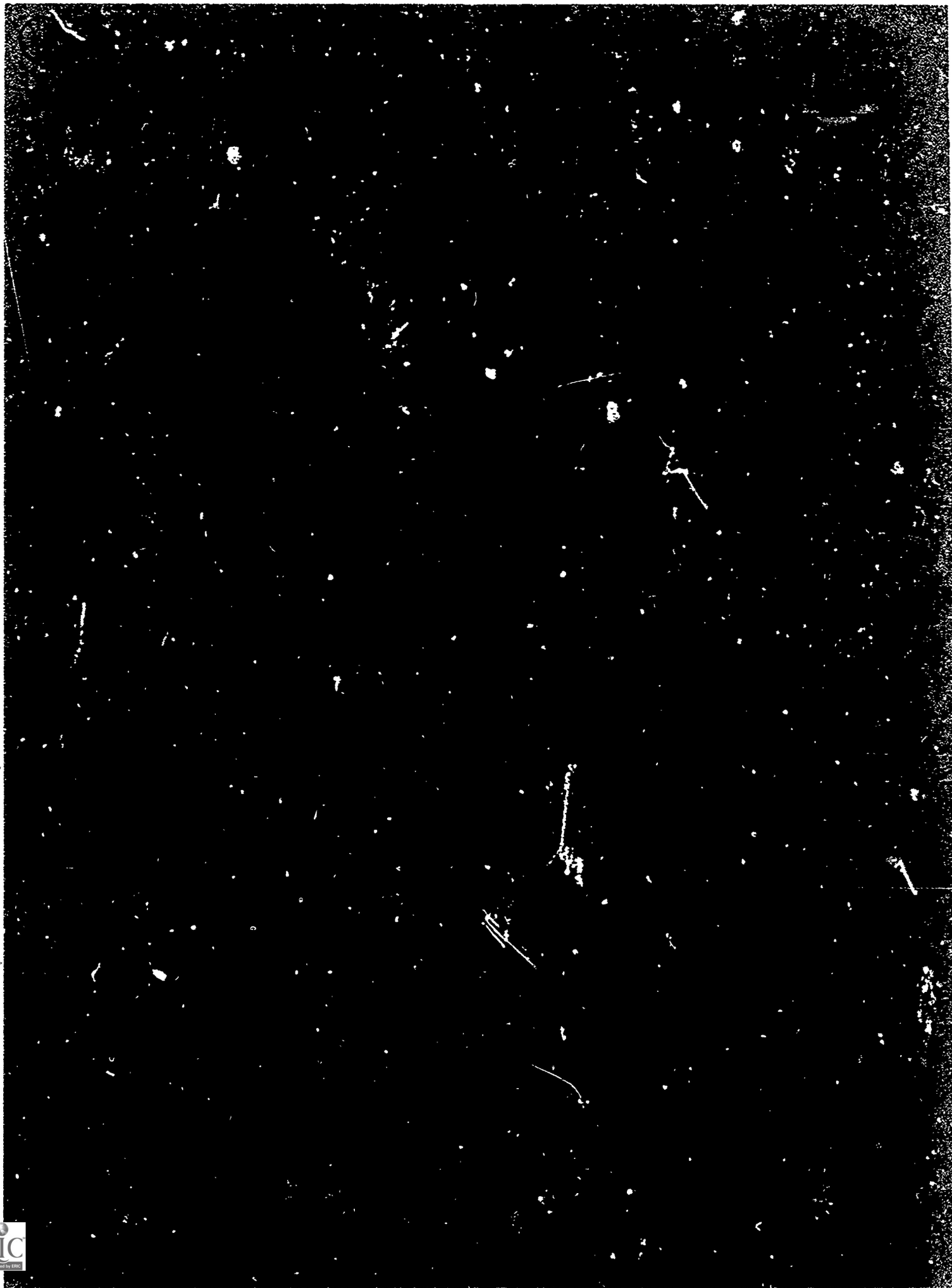
ABSTRACT

This study documents the revenue and expenditure patterns for categories of school districts and for individual school districts. The fiscal impact of the current system, the nature and extent of fiscal disparities, and the factors that contribute to the disparities are examined. An attempt is made to distinguish between disparities among districts in educational resources and services and disparities in prices or wages for equivalent levels of service. Data from all school districts of the State are analyzed for the school year 1971-72. Also, since by the legislature in October 1971 there was a major change in the Minnesota system of financing education, data for the school year 1971-72 are compared with that of the previous year to determine the impact of the new legislation. Although fiscal 1972 was a transitional year, the analysis gives an indication of the relative magnitude of the legislative changes on the various districts. (Author/DN)





THE FINANCING OF SCHOOLS IN MINNESOTA

Betsy Levin
Thomas Muller

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FOREWORD

This is a report to the citizens--legislator, educator, parent, taxpayer--of Minnesota on the status of financing public elementary and secondary education in the state. This study documents the revenue and expenditure patterns for categories of school districts and for individual school districts. The fiscal impact of the current system, the nature and extent of fiscal disparities, and the factors which contribute to the disparities are examined.

The analysis goes beyond simple dollar disparities. An attempt is made to distinguish between disparities among districts in educational resources and services and disparities in prices or wages for equivalent levels of service.

Data from all school districts of the state are analyzed for the school year 1971-72. Also, since as a result of action by the legislature in October 1971 there was a major change in the Minnesota system of financing education, data for the school year 1971-72 are compared with that of the previous year to determine the impact of the new legislation. Although fiscal 1972 was a transitional year, the analysis gives an indication of the relative magnitude the legislative changes will have on the various districts.

This study was conducted by The Urban Institute's Education Finance State Service. In recognition of the need for detailed and objective information as to the impact, on a school district basis, of existing and alternative methods of financing education, the service was initiated.

Analysts at the Institute work with legislative and administrative units in selected states to evaluate existing finance structures and to develop alternative plans. States are responsible for data collection and initial preparation, while The Urban Institute's analytical work is funded by the Carnegie Corporation of New York.

This study of Minnesota school finance was conducted at the request of the Senate and House Education Committees of the Minnesota State Legislature, and is the product of close cooperation between the Urban Institute and these legislative committees, the State Department of Education and the State Department of Taxation. Mr. Richard Sands, Assistant Senate Counsel, ably served as state liaison and coordinator for the project, assisted by Ms. Joyce Clague. The staff of the Institute's Education Finance State Service, however, is solely responsible for the analyses and interpretations.

It is hoped that this report will contribute to a deeper understanding of some of the elements involved in the financing of elementary and secondary education in the State of Minnesota and will enable its policy makers and the general public to make more informed choices about ways in which to finance schools.

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I. INTRODUCTION

State and local governments have experienced acute growth in expenditures. Although the expanding economy supported some increases in public spending, it could not keep pace with the demand. Thus increased revenue requirements forced states and localities periodically to enact new measures--rate increases on existing taxes or new taxes. Funds for public elementary and secondary education constitute the largest single item, 39.4 percent in 1970-71,[1] in state and local expenditures. School costs contribute significantly to increased taxation.

Despite increased revenues, many school systems have found themselves faced with grave fiscal problems resulting in program cutbacks and closures. Citizen concern over rising taxes, rising school costs, and declining or inadequate services focused attention on state systems for financing local schools. Many perceived the funding arrangements which allow wide differences in expenditures and tax rates among school districts to be inequitable and unrelated to any educational criteria. Thus, school fiscal reform became an issue commanding attention from the public, the political establishment, and the courts.

In 1971 Minnesota faced a full array of forces for reform. The Governor had proposed a "Fair School Financing Plan" to the legislature; there was broad-based support for reducing property tax rates; lawsuits

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1. National Education Association, Rankings of the States, 1973, Research Report 1973-R1, Washington, D.C.

seeking to have the system declared unconstitutional had been initiated.[2] The system these forces sought to reform is a familiar one. Interdistrict disparities in both school expenditures and tax rates were substantial. The level of the state minimum guaranteed program was much lower than the program provided in any community. Economic ability of local districts to a large extent determined actual expenditures regardless of the educational requirements of students. Before turning to a discussion of the reform measure ultimately enacted, the old finance system and the legal challenge to that system are briefly described.

MINNESOTA'S PRE-1971 FOUNDATION PROGRAM

Minnesota's school finance system is typical of the foundation approach to school finance. That is, a single expenditure level is set by the state for joint support. The local unit must levy a specified tax rate to participate. The yield which that tax effort produces from the local tax base is deducted from the established expenditure level to determine the state allocation. In addition, there is a flat per pupil grant. Districts in which the property wealth yields more than the state foundation guarantee still receive the flat grant. The flat grant is included in calculating the amount a district receives under the foundation program. Thus the flat grant in effect only benefits the wealthier districts. If the yield is in excess of the expenditure level, the local district retains it. As in many states, the foundation is modified to incorporate a flat

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2. A. Morley, "Minnesota," A Legislators Guide to School Finance, Denver, Colorado, The Education Commission of the States, August 1972, pp. 33-35, outlines the legislative history of the reform effort.

grant aspect by guaranteeing a minimum payment. Local funds provide additional revenues over and above the foundation expenditure level.[3]

In 1970-71 the foundation expenditure level for maintenance (operating) costs was $404 per pupil in average daily attendance.[4] The required local levy was 20 mills on adjusted assessed valuation of property. The minimum guarantee (or flat grant) was $141, adjusted downward if a district expended or taxed less than required in the formula.

The state disbursed funds to school districts through a number of aid programs in addition to the foundation plan. Categorical aid was given for transportation, handicapped students, and vocational education. Special payments such as those made for exempted personal property, the homestead credit, taconite property, railroads, and publicly-owned property were designed to compensate for property not subject to taxation or subject to reduced taxation.

The various state payments provided support for approximately 52 percent of current operating expenditures (all federal aid is excluded), and 48 percent came from local levies. The state imposed limitations on the number and amount of local levies which were permitted. However, the limitations were not uniformly applied to all school districts nor did they relate directly to the foundation amounts.[5]

This system permitted a wide range in expenditures and a wide range in local tax rates. In 1970-71, per pupil expenditures ranged from a high

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3. In 1970-71, every school district in Minnesota found it necessary to supplement the foundation guarantee with local revenues.

4. This report will use the more common term of "current operating expenditures" or "operating costs" rather than the term "maintenance costs" in use in Minnesota.

5. Minnesota State Department of Education, "1971 Tax Law: A Special Report," Update, Vol. 6, No. 5, St. Paul, March 1972.

of $1,317 to a low of $721 (a gap of $596 per pupil)[6] and tax rates from $0.66 to $3.67 per $100 market value. Consequently, the constitutional validity of Minnesota's system of school finance was challenged.

VAN DUSARTZ v. HATFIELD

Donald and Audrey Van Dusartz and their three daughters, students in White Bear Lake School District, brought suit against various state and local officials. The Van Dusartzes sought to show that educational resources were allocated in direct proportion to the wealth of individual school districts. They complained that the system denied their children substantially equal educational opportunity and as real property owners, required them to pay higher tax rates than those in wealthy districts to achieve the same or lesser expenditure level.[7]

On October 12, 1971, U.S. District Judge Miles Lord, in a ruling which denied defendants' motion to dismiss, held that the system which made spending per pupil a function of the school district's wealth violated the equal protection clause of the Fourteenth Amendment of the U.S. Constitution.[8] Judge Lord noted that school districts in Minnesota differ in taxable wealth per pupil from almost none to above $30,000. He hypothesized that in the case of a district with $10,000 assessed valuation, the local levy of 20 mills would raise $200 which the state would supplement with $204 for a

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6. Exclusive of federal funds. When federal funds are included, the gap in per pupil expenditures is increased from $596 to $601.

7. Plaintiff's Complaint, Van Dusartz v. Hatfield, 334 F. Supp. 870 (D. Minn. 1971).

8. The U.S. Supreme Court, in San Antonio Independent School District v. Rodriguez, ____ U.S. ____ (1973), has since held that while such a system of financing education may be inequitable, it is not a violation of the U.S. Constitution.

total of $404 per pupil. Another district, however, with the same 20 mill levy, could have sufficient taxable wealth to raise $450 and under the minimum guarantee it would still receive $141 for a total of $591 per pupil. Furthermore, millages in excess of the 20 mill levy would allow progressively higher spending in the wealthier districts. He considered the allegations in light of the August 1971 California Supreme Court ruling in Serrano v. Priest and made findings similar to the California Court. Judge Lord retained jurisdiction of the case pending action by the legislature. Whether the legislation which emerged from the legislative session would have passed judicial review is a moot question since plaintiffs dismissed their complaint after it was enacted.[9]

THE REFORM LEGISLATION

On October 30, 1971, an Omnibus Tax Bill was enacted which gave more direct responsibility for levying taxes of all kinds to the state while returning more revenues to the local governments. It significantly increased the state's contribution to funding local schools with the intent of equalizing expenditures at the statewide average, and attempted to remove tax levy inequities by regulating total state and local revenues available to each school district.

THE BASIC FOUNDATION

For the transitional year 1971-72, the expenditure level is $600 and the required local levy is 30 mills. For the year 1972-73, with certain exceptions, the foundation expenditure level is $750 per pupil unit in

9. It would also be moot following the March 1973 U.S. Supreme Court ruling in San Antonio Independent School District v. Rodriguez.

average daily membership[10] and the local levy is 30 mills of EARC valuation.[11] For both years the minimum guarantee is $215 per pupil. Essentially in 1972-73, each district is guaranteed a sum not less than its expenditure in 1970-71 plus an $87 per pupil unit increase. Those districts in which the sum is less than $750 have both the foundation aid and the required levy reduced proportionately. Those districts in which the sum is greater than $750 may levy tax rates in excess of 30 mills to make up the difference. Otherwise the authorized levy may only be increased if approved by the voters in a referendum.

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10. Pupil units are computed on the basis of weights--0.5 for kindergarten and prekindergarten handicapped pupils in half-day sessions, 1.0 for elementary pupils in either 6 or 8-year elementary programs, 1.4 for middle school pupils and secondary school pupils, and 1.5 for post-graduate area vocation-technical school pupils. Average Daily Membership (ADM) is the number of pupils that are enrolled per day. Prior to 1971 pupils were measured in Average Daily Attendance (ADA).

11. EARC (Equalization Aid Review Committee) property values are statewide equalized values, used to offset varying local assessment practices. EARC values are derived by dividing the assessed value of property by the Adjusted Market to Market ratio. The following example computed for a hypothetical owner-occupied housing unit may help to illustrate this process:

Market Value of Owner-Occupied Housing Unit	$21,000
Adjusted Value (1/3 of Market Value)	7,000
Assessment Ratios	
25% of first $4,000 of Adjusted Value	1,000
40% on Adjusted Value above $4,000	1,200
Assessed Value	$ 2,200

$$\text{EARC Value} = \frac{\text{Assessed Value}}{\text{EARC Ratio}}$$

$$\text{EARC Value} = \frac{2,200}{1/3} = \$6,600$$

The assessment ratios shown here are for owner occupied residential property. Different assessment ratios exist for other types of property. This example is based on the approach used prior to 1972. Subsequent to that year, a different approach would be used, although the end result would be the same.

OTHER SIGNIFICANT PROVISIONS

In addition to the categorical aids for transportation, handicapped students, and vocational education, the state moved to compensate for "educational overburden." Pupils from families receiving aid for families with dependent children (AFDC) are counted as an additional .5 pupil unit. One half the formula amount, $300 in 1970-71 and $375 in 1972-73, is paid by the state for each AFDC student. The funds need not be spent on programs benefiting only those pupils.

State aids to compensate for reductions in property valuation continue to be made. Two new payments were enacted, an agricultural property differential and replacement for taxes lost because of exemption under this act of business personal property. Remaining in effect are the homestead credit payment and payment in lieu of taxes on exempt real property such as taconite, railroad, and publicly owned properties. However, districts which receive payments in lieu of real property taxes will have their foundation aid reduced by specified percentages of these payments. Payments made for personal property exempted by the 1967 Sales Tax Act and the sales tax per capita payment were repealed.

School districts with declining enrollments are permitted to use the average of two years' enrollment in computing pupil units, thereby recognizing only one-half of the loss. School districts with increasing enrollments may use projected pupil units in computing local levies, whenever annual growth of total pupil units exceeds 5 percent.

Local levies in addition to the basic 30 mills are permitted only for the specific purposes of capital outlay, debt service, transportation, post-graduate area vocational-technical schools, operating costs and

unfinanced costs during the transition year of 1971-72, and liabilities of dissolved districts. The penalty for exceeding the authorized levies is loss of state aid in the succeeding year equal to one-half the excess levy.[12]

12. Minnesota State Department of Education, "1971 Tax Law...".

II. SUMMARY OF FINDINGS

Minnesota ranks high among the states in its investment in public education--6.6 percent of personal income was devoted to public school revenue in 1970-71.[1] This study documents the sources of Minnesota school revenue, the impact of the tax structures for the support of education among districts and among income groups, the expenditure differentials and their relation to the level of educational services and the variation in cost of these services among the districts for the 1971-72 school year.[2] In addition, changes in the revenue and expenditure patterns between 1970-71 and 1971-72 are examined to determine the impact of the 1971 legislation.

REVENUES

In fiscal 1972, 63 percent of all school revenues comes from the state, 34 percent is local, and 3 percent is federal. The state share increased

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1. National Education Association, Rankings of the States 1972, Research Report 1972-R1, Washington, D.C., 1972, p. 49. The nationwide average is 5.4 percent of personal income.

2. Capital expenditures (with the exception of tax rates for debt service) are excluded from this analysis, since this is a cross-sectional study which examines revenues and expenditures for the 1971-72 school year. Large capital outlays are generally sporadic rather than on an annual basis. Thus the inclusion of capital expenditures would distort any analysis of revenue and expenditure patterns among districts undertaken for a single year. It should be noted, however, that capital costs are of particular concern to local school districts in Minnesota, since the state does not provide funds for construction other than in the form of loans to local districts.

considerably from fiscal 1971, when it comprised 49 percent of total school revenues.

REVENUES BY SOURCE OF FUNDING

LOCAL REVENUES

In fiscal 1972 local revenues are providing 34 percent of the education dollar--a statewide average of $356 per pupil. The two central cities, Minneapolis and St. Paul, have the highest local revenues. The least amount of local revenues, on the average, are raised in rural areas. However, sharp differences exist among both suburban and rural districts in the amount of revenues derived from local levies. This study finds that revenue differentials are a function of variations in property wealth.

The effect of the new legislation has been to reduce local tax rates, causing a statewide reduction in local revenues of 30.6 percent between fiscal 1971 and 1972. Nevertheless, interdistrict disparities in local revenue have actually increased in 1972 since less affluent districts lowered their tax rates more than districts with higher property values. A comparison of selected districts within the Minneapolis-St. Paul metropolitan area illustrates this. Minneapolis and its suburb, Golden Valley, are high valuation districts; they reduced their school tax rates by $0.34 and $0.45 per $100 market value respectively. By contrast, Anoka, a suburb adjacent to Golden Valley and with low property values, reduced its tax rates by $1.11. LaCrescent, a rural non-agricultural school district, also with low property values, reduced its school tax rate by $0.52.

On a statewide basis, the reduction in property taxes for operating costs is 33 percent. Nevertheless, the total school mills for the state declined by only 23 percent, because of near universal increases in property taxes for capital outlays.

STATE REVENUES

School districts receive an average of $663 per pupil from state sources during fiscal 1972. The largest distribution is made through the foundation program. The two central cities receive the least amount of foundation aid, and in general, rural areas receive the greatest amount. The remainder of funds from the state are distributed through tax relief programs and categorical aids. Metropolitan areas receive more than other areas in homestead credit payments; the rural areas receive more from other tax relief measures such as taconite aid and the agricultural differential payment. The two central cities receive more than three times as much aid on a per pupil basis as any other category of district from the new provision for distributing aid on the basis of the number of pupils from AFDC families. Rural non-agricultural districts also receive payments under the AFDC program above the statewide average.

As compared with fiscal 1971, state revenues have increased by 23.7 percent. Minneapolis receives an additional $120 per pupil, Golden Valley $82, Anoka $172, LaCrescent $197. Of the additional amount of state revenues received by Minneapolis, $75 is due to the AFDC program. Its suburb, Golden Valley, gets $5 per pupil in AFDC aid. Thus, if educational overburden had gone unrecognized in the new legislation, affluent suburbs would receive more state funds than the central cities.[3]

TOTAL REVENUES

State funds have somewhat of an equalizing effect among school districts since more state funds go to low valuation districts. However,

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3. Affluent residential suburbs receive more homestead credit payment funds per pupil than do the central cities, since the latter have high percentages of commercial/industrial and renter-occupied property.

state funds do not totally counteract the disparities in per pupil funds due to differences among districts in local revenues. Federal funds have no significant equalizing impact.

WEALTH MEASURES, REVENUE AND EXPENDITURES

There is a strong positive correlation between total per pupil expenditures and local district property wealth. The importance of property wealth in determining the level of expenditures actually increased between fiscal 1971 and 1972. Non-residential property values, in comparison with residential values, are the stronger factor in explaining the level of expenditures.

In contrast to property wealth, per capita income shows comparatively little correlation with expenditure levels.

TAX BURDEN

An important aspect of equity concerns the impact of the state and local tax structures on different income groups. That is, what portion of household income is paid through taxes to support education and is the tax burden regressive, progressive, or proportional?

When the combined state and local taxes for education are examined, they are found to be regressive--the percent of income taxed is greater for low-income than for high-income households. Local taxes, primarily taxes on real property, are regressive with a tax burden ranging from 8.8 percent of income for low income households to 2.3 percent for high income households. State taxes, comprised of personal and corporate income taxes and sales taxes, are substantially progressive in that as household income increases, the percentage of income taxed for education also increases. It

is not sufficient, however, to offset the regressive impact of the local property tax.

If the tax structure had not been revised, state tax burdens would have been lower and local tax burdens higher, resulting in a more regressive total tax burden for the support of education. The 1971 legislation resulted in a modest redistribution in tax burden from lower to higher income families.

EXPENDITURES

There are substantial differences in per pupil expenditures among school districts, as can be seen from an examination of selected districts within the Minneapolis-St. Paul metropolitan area. For example, per pupil expenditures for operating costs for the school year 1971-72 are $1,310 in Minneapolis, $1,516 in Golden Valley and $901 in low property wealth Anoka. LaCrescent, a rural non-agricultural district, spends $897 per pupil. The $413 gap between per pupil expenditures in Minneapolis and per pupil expenditures in the rural district of LaCrescent and the $615 gap between the per pupil expenditures of the poorest and wealthiest suburb in the metropolitan area are greater than the gaps that existed in 1970-71. An analysis of the purchasing power of the educational dollar, however, distinguishing between differences among districts in the level of services provided and differences in the cost of equivalent services, demonstrates the importance of looking beyond absolute dollar disparities among districts.

Variations in instructional costs are the principal factor in explaining expenditure differentials. Non-instructional expenditures and fixed charges show comparatively little variation. The number of other instructional personnel, such as special education teachers, counselors, speech

therapists, and their salaries contribute significantly to higher instructional costs. Expenditures for these personnel range from an average of $205 per pupil in the central cities to $126 in suburban areas to $43 in rural areas. The greater investment in other instructional personnel explains most of the higher expenditures in central cities as compared to their suburbs, which in turn reflects the greater number of students requiring special education.

Expenditures for classroom teachers are substantially the same between the cities and their suburbs. They are, however, considerably higher in metropolitan areas than in rural areas. The major factor explaining the difference in expenditures is the higher salaries paid in urban areas for teachers of equivalent education and experience. The pupil-teacher ratios, with the exception of agricultural districts under 500 ADM, show only slight variation among the districts and thus differences in pupil-teacher ratios contribute little to expenditure differentials. Additional education and experience of teachers do contribute to higher expenditures. Since salary schedules provide payments above the base salary for additional education, the higher proportion of teachers with advanced degrees in metropolitan areas compared to rural areas helps to explain the higher instructional expenditures in the former areas. Higher salaries for principals and higher costs of employee benefits in urban areas also are factors in urban-rural expenditure differentials.

III. THE MINNESOTA SCHOOL FINANCE SYSTEM REVENUE AND EXPENDITURE PATTERNS

CLASSIFICATION OF SCHOOL DISTRICTS

To better identify revenue and expenditure patterns among Minnesota school districts, the 432 school districts analyzed, are grouped into nine categories based on their degree of urbanization, growth rate, or size of population or enrollment district.

Urban school districts are divided into five groups. The central city districts are Minneapolis and St. Paul, with an average population of 372,200. Slow growth suburban districts are those located near the central cities with a rate of population growth between 1960 and 1970 that was below the median of all suburban districts in the state. Fast growth suburban districts are also close to the central cities but with population growth rates higher than the suburban median. Larger city districts are those with populations over 25,000 which are not surrounded by built-up suburban areas--Duluth is included in this category. Smaller city districts are those containing populations between 5,000 and 25,000. About 63 percent of the pupils in Average Daily Membership (ADM) in Minnesota reside in those districts classified as urban. The central cities and both groups of suburbs constitute the Minneapolis-St. Paul Standard Metropolitan Statistical Area (SMSA) which contains about 41 percent of the state ADM.

Rural school districts are divided into four groups. Iron Range districts include some small cities. Large agricultural districts have 500 or more

pupils in ADM and small agricultural districts have less than 500 ADM. Rural non-agricultural districts are comprised mostly of recreational and timber property and are generally located in the northeastern portion of the state. The two agricultural groups contain 70 percent of the school districts in the state and about 29 percent of the state ADM. Table 1 shows for each analysis group the number of districts, the average ADM, and the percent of state ADM.

This classification of districts permits comparisons among types of districts. The distinction between fast and slow growth suburbs is useful since educational costs may vary according to the pace of growth and age of the community. In analyzing costs, it is sometimes useful to look at the metropolitan area as a whole. Central cities and suburbs in large metropolitan areas are likely to compete for teachers in the same labor market. Thus, the greater difference will be between the metropolitan area and rural areas, each of which is likely to have its own wage structure patterns.

The standard unit used in this report for comparing school districts is Average Daily Membership (ADM) rather than enrollment or Average Daily Attendance. Statistics, where applicable, are weighted by the size of the school district ADM. This means that a central city district is given more "weight" in calculating the statewide average than a small rural district. For example, Minneapolis, with an ADM of 62,647 comprises 7.7 percent of the total state ADM. Thus, in calculating a statewide average, Minneapolis has a stronger influence than a district with 500 students.

Disparities between school districts are expressed in terms of coefficients of variation. This is a statistical measure defined as the standard deviation divided by the mean. Low values indicate little disparity between districts.

TABLE 1

ANALYSIS GROUPINGS
1971-72

TYPE OF DISTRICT	No. of Districts*	Average ADM	Percent ADM
Urban			
1) Central Cities	2	52,956	12%
2) Slow Growth Suburbs	15	8,794	15
3) Fast Growth Suburbs	15	9,015	15
4) Larger Cities	7	10,895	9
5) Smaller Cities	32	3,573	13
Rural			
6) Iron Range	13	1,965	3
7) Large Agricultural (Over 500 ADM)	188	1,066	23
8) Small Agricultural (Under 500 ADM)	116	347	5
9) Rural Non-Agricultural	44	983	5
STATE TOTAL	432		100%

*Total number of districts (grades 1 through 12) in the state is 437. Five districts were omitted from this analysis because of data limitations.

REVENUES

REVENUES BY SOURCE OF FUNDING

LOCAL REVENUES

Local revenues in Minnesota are derived primarily from local property taxes. As such, local revenues are a function of both property wealth and tax rates.

Local revenues in fiscal 1972 are the highest in the two central cities--$622 per pupil in Minneapolis, $554 per pupil in St. Paul--followed by an average of $439 in the slow growth suburbs. The lowest local revenues occur generally in the rural non-agricultural district category with an average local revenue per pupil of $220. With the exception of the central city category, there are sharp differences among districts in each of the groups. For example, within the slow growth suburban category of districts, $273 per pupil is generated from local sources in Brooklyn Center, whereas Edina raises $696 per pupil. This vast difference between two districts within the same category is due to the differences in property wealth. Edina has considerably more property wealth--$21,908 per pupil (EARC) compared to $9,552 in Brooklyn Center. Brooklyn Center and Edina have approximately the same effective tax rates.

Within the fast growth suburban district category, the extremes are Golden Valley, which raises $886 per pupil and Centennial, which raises only $152 per pupil. The difference again is due primarily to differences in per pupil property wealth--$23,497 in Golden Valley, $4,996 in

Centennial. The tax rates are actually lower in Golden Valley than in Centennial, even though Golden Valley is raising $734 more per pupil of local revenue than Centennial.

Among the rural non-agricultural districts, Menahga collects only $86 per pupil locally, while Wrenshall, at the other extreme, raises $498 per pupil.

Local revenues per pupil by type of district are given in Figure 1. Total local revenues were reduced by over 30 percent between fiscal 1971 and 1972. However, these reductions are not distributed evenly. Central cities reduced their revenues by only 19.4 percent; the large agricultural districts reduced theirs by an average of 42 percent. Slow growth suburbs decreased their local revenues per pupil by 25.8 percent. Fast growth suburbs averaged a more substantial reduction of 37.1 percent. In general, less affluent districts reduced their local revenues more than higher wealth districts. For example, Anoka local revenues were reduced from $292 to $122 per pupil, Brooklyn Center from $456 to $273. High property wealth Edina lowered local revenues from $719 to $696, a cutback of only $23 per pupil. As a result of this pattern, the interdistrict disparities in local revenues increased between fiscal 1971 and 1972.[1]

LOCAL REVENUES RELATED TO PROPERTY TAX RATES. The reduction in local revenues between fiscal 1971 and 1972 was due to the fact that property tax rates for operating costs were reduced by 33 percent in this period. The sharpest reductions were among rural non-agricultural districts, 38 percent.

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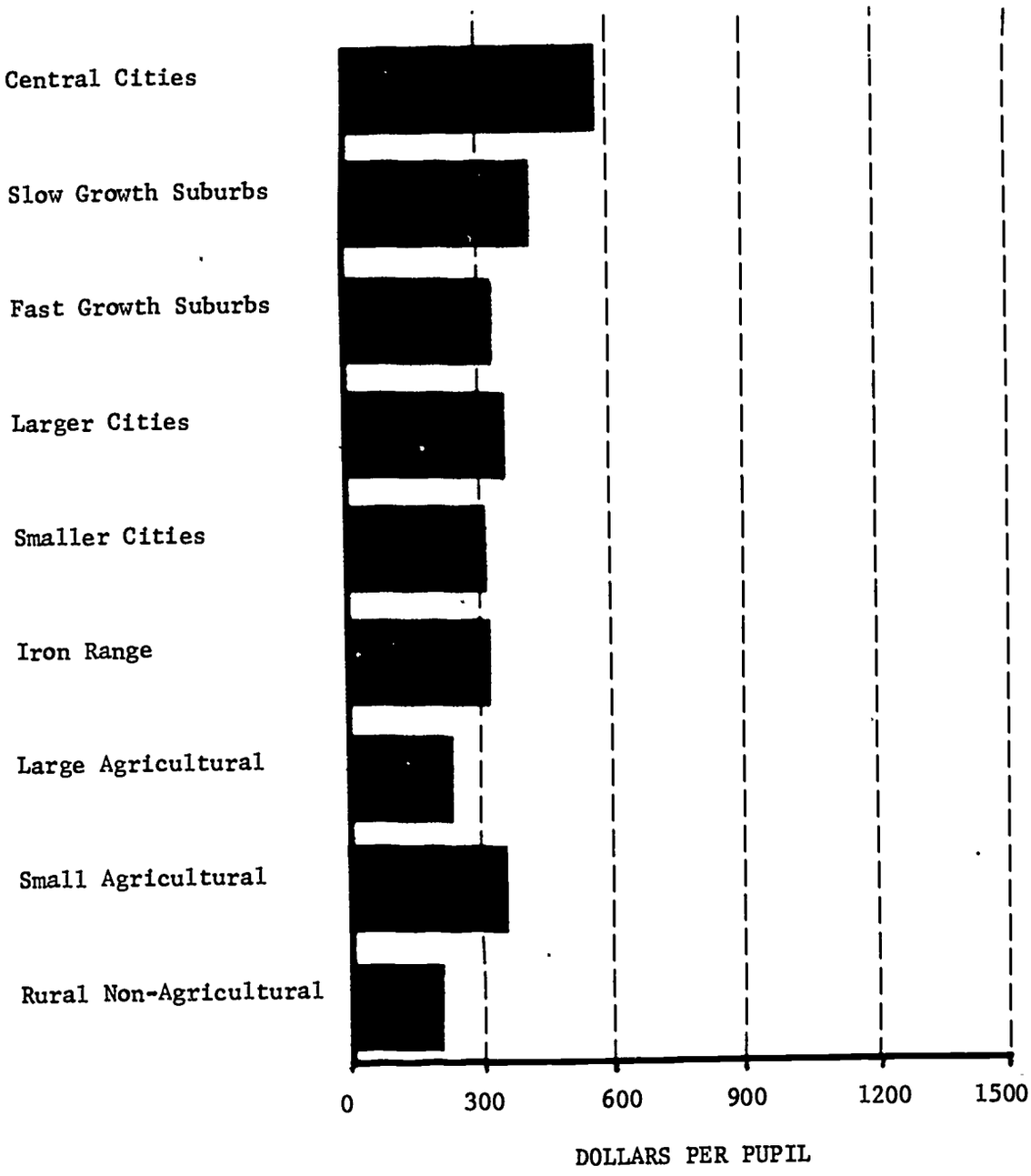
1. The coefficient of variation increased from .31 in fiscal 1971 to .47 in fiscal 1972. It should be noted that local revenues are computed for this analysis by multiplying assessed property values by the auditor's mill rate minus a 3 percent collection factor and minus the maintenance share of homestead credit. This amount differs from actual local revenues reported. Actual local revenues are approximately two-thirds of the previous year's tax levy and one-third of the current year's levy.

Figure 1

LOCAL REVENUES
(in dollars per pupil)
1971-72



The least change was in the two central cities, which averaged a 20 percent reduction in tax rates. The reduction in tax rates for operating costs was offset by increases in property taxes for capital outlays, as shown in Table 2. Taxes for capital outlay increased in every school district category. For fiscal 1972, one-third of the local tax rate for schools is allocated to capital outlay, two-thirds to operating expenditures. This is a higher proportion for capital outlay than is allocated in such states as California and Michigan.[2]

In examining the tax effort made by various types of school districts for the support of education, the "municipal overburden"--the non-educational public services such as police and fire protection or health services that must also be supported out of the property tax--should be considered. The comparatively high percentage of local property taxes allocated for these latter services in certain districts, particularly city school districts, may well limit the extent to which these districts can realistically be expected to match the property tax rates levied for education in other school districts that are not so heavily burdened by these non-education expenses.

As shown in Table 3, the highest total tax rate--for both education and non-education public services--is in the Iron Range districts, $3.80 per $100 market value, followed by the central cities, $3.44. By contrast, the suburbs of the central cities, although having a higher tax rate for schools, have considerably lower total taxes. Thus, suburbs allocate more than two-thirds of their property tax for education, which is consistent with the

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2. B. Levin, T. Muller, and C. Sandoval, The High Cost of Education in Cities, Washington, D. C., The Urban Institute, 1973, Chap. Three, p. 37.

TABLE 2

EFFECTIVE PROPERTY TAX RATES FOR EDUCATION--CAPITAL AND OPERATING*

(Per $100 Market Value of Property)

TYPE OF DISTRICT	Operating Tax Rates 1970-71	Operating Tax Rates 1971-72	Percent Change In Tax Rates	Capital Tax Rate 1970-71	Capital Tax Rate 1971-72	Percent Change In Tax Rates	All School Tax Rates 1970-71	All School Tax Rates 1971-72	Percent Change In Tax Rates
Urban									
1) Central Cities	$1.49	$1.16	-20.1%	$0.31	$ .42	+35.5%	$1.80	$1.58	-12.2%
2) Slow Growth Suburbs	2.00	1.39	-30.5	0.52	.55	+ 5.6	2.52	1.94	-23.0
3) Fast Growth Suburbs	1.94	1.21	-37.6	0.65	.66	+ 1.5	2.59	1.87	-27.8
4) Larger Cities	1.79	1.18	-34.1	0.47	0.56	+19.1	2.26	1.74	-23.0
5) Smaller Cities	1.66	1.01	-39.2	0.60	0.61	+ 1.7	2.26	1.62	-28.3
Rural									
6) Iron Range	2.53	1.49	-41.1	0.12	0.19	+58.3	2.65	1.68	-36.6
7) Large Agric. (Over 500 ADM)	1.35	0.82	-39.3	0.54	0.60	+11.1	1.89	1.42	-24.9
8) Small Agric. (Under 500 ADM)	1.26	0.90	-28.6	0.45	0.50	+11.1	1.71	1.40	-18.1
9) Rural Non-Agric.	1.51	0.94	-37.8	0.43	0.52	+20.9	1.94	1.46	-24.7
STATEWIDE AVERAGE	$1.65	$1.10	-33.3%	$0.49	$0.55	+12.2%	$2.14	$1.65	-22.9%

*Operating tax rates include tax rates for maintenance, transportation, and other tax rates for current operating expenditures.

TABLE 3

EFFECTIVE PROPERTY TAX RATES FOR ALL PUBLIC SERVICES

1971-72
(Per $100 Market Value)

TYPE OF DISTRICT	Property Tax Rates For Education*	Property Tax Rates For Other Public Services	Total Property Tax Rate	Percent Education Tax Rate of Total Property Tax
Urban				
1) Central Cities	$1.58	$1.86	$3.44	45.9%
2) Slow Growth Suburbs	1.94	0.94	2.88	67.4
3) Fast Growth Suburbs	1.86	0.91	2.77	67.1
4) Larger Cities	1.74	1.24	2.98	58.4
5) Smaller Cities	1.62	0.89	2.51	64.5
Rural				
6) Iron Range	1.67	2.13	3.80	43.9
7) Large Agric. (Over 500 ADM)	1.42	0.59	2.01	70.6
8) Small Agric. (Under 500 ADM)	1.39	0.49	1.88	73.9
9) Rural Non-Agric.	1.46	0.93	2.39	61.1
STATE AVERAGE	$1.65	$1.05	$2.70	61.1%

*Property tax rates for education include operating and capital levies.

pattern found in other states studied, while the schools in the central cities receive only 46 percent of the property tax dollar.[3] Rural areas have tax rates both for schools and for other public services that are substantially below the average. In the agricultural districts, tax rates for public services other than education are very low, with schools receiving over 70 percent of the tax dollar. Figure 2 shows the tax rates for both education and non-education public services for selected categories of school districts.

STATE REVENUES

Revenues from the state can be grouped into three categories. They are the foundation program, tax relief programs including homestead credit and taconite aid, and categorical payments for special education, transportation, AFDC, and teacher retirement. The distribution of these various state aid programs for all categories of school districts is shown in Table 4 and Figure 3.

FOUNDATION PROGRAM. In fiscal 1972, the largest recipients of the foundation program are rural non-agricultural districts which receive $526 per pupil, followed by Iron Range districts which receive $507. Fast growth suburbs receive $415 per pupil. The two central cities receive the least amount, an average of $257 per pupil.

Between fiscal 1971 and 1972, the average amount of foundation aid increased by $130. The largest recipients of the foundation program in 1971, as in 1972, were rural non-agricultural districts. An average increase

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3. This compares with 46 percent for the central city of Michigan, 55 percent for California's central cities, 35 percent for the central city of Delaware. Levin, et al., The High Cost of Education ..., Chap. Four, p. 58, Table 17.

Figure 2

EFFECTIVE PROPERTY TAX RATES FOR ALL PUBLIC SERVICES
(Per $100 of Market Value)
1971-72

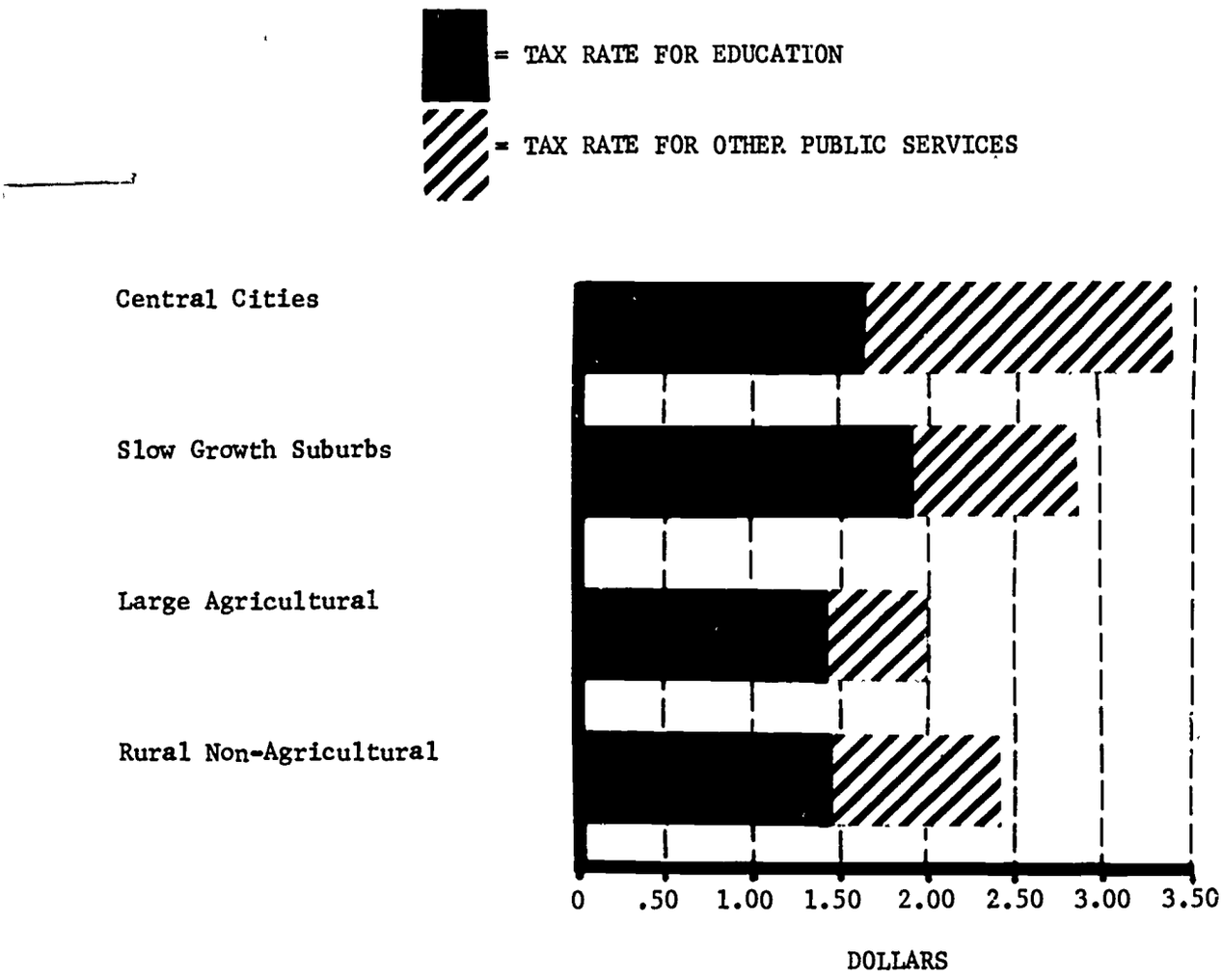

Figure 3

STATE AID PROGRAMS
(in dollars per pupil)
1971-72

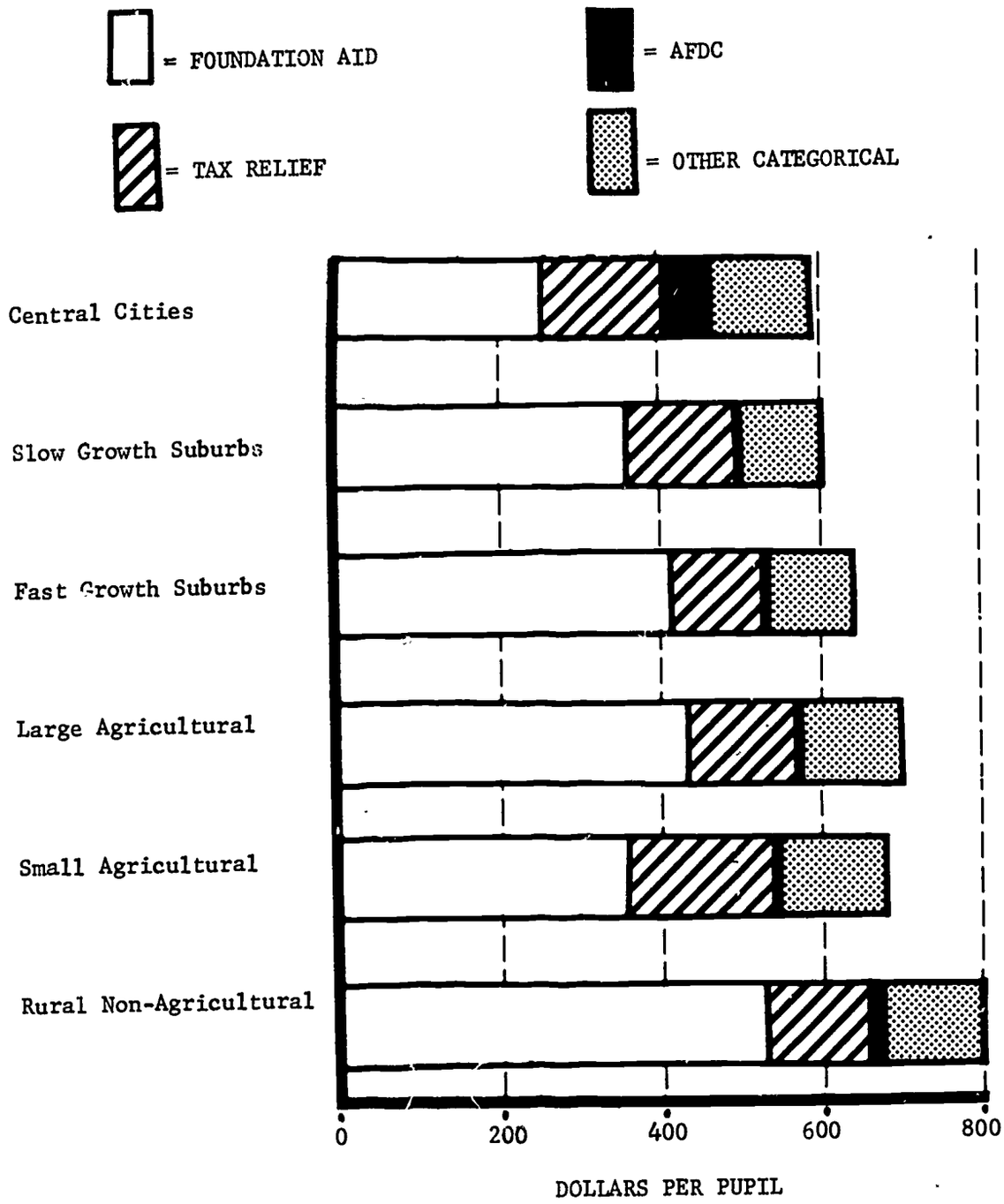

TABLE 4

STATE AID PROGRAMS

1971-72
(Dollars Per Pupil)

TYPE OF DISTRICT	FOUNDATION	TAX RELIEF						CATEGORICAL					TOTAL STATE AID
Urban	Fdn. Aid	Homestead Credit	Personal Prop. Exempt.	Tax Exempt Land	Agric. Diff.	Taconite Aid	Other Rebate 1/	Spec. Educ.	Trans. Aid	Teacher Retire.	AFDC	Other	
1) Central Cities	$257	$103	$37	$ 0	$ 0	$ 0	$ 6	$45	$ 4	$68	$66	$ 3	$589
2) Slow Growth Suburbs	361	111	16	0	3	0	3	17	22	66	8	*	607
3) Fast Growth Suburbs	415	92	14	0	2	0	4	18	25	62	8	2	642
4) Larger Cities	398	85	79	0	5	0	6	24	16	67	18	3	651
5) Smaller Cities	421	71	24	0	18	2	11	19	27	63	13	2	671
Rural													
6) Iron Range	507	55	16	1	5	122	32	18	28	63	12	*	858
7) Large Agric. (Over 500 ADM)	429	60	29	2	41	0	5	14	43	59	10	3	695
8) Small Agric. (Under 500 ADM)	360	56	38	*	80	0	7	8	47	64	8	11	[illegible]
9) Rural Non-Agric.	526	47	13	6	18	22	23	16	50	51	20	9	801
STATE AVERAGE	$396	$ 80	$24	$ 1	$18	$ 5	$ 8	$20	$28	$63	$17	$ 3	$663

*Under $0.50.

1/ Includes shared taxes, gross earnings, state trust land, and declining valuation

of $189 over fiscal 1971 was paid to these districts under the foundation program. However, fast growth suburbs received only $93 more per pupil, central cities $104 more, and slow growth suburbs $84 more. Thus, the revised foundation program provides considerably more funds to non-metropolitan areas of the state.

OTHER STATE AID PROGRAMS. The major new program, AFDC aid, provides an average of $17 per pupil in new state funds for 1972. Under this program, the central cities are the largest recipients, with $66 per pupil, while rural non-agricultural districts receive $20, and outstate larger city districts $18. As shown in Table 5, 46 percent of the state's public school students who are from AFDC households are located in the two central cities of Minneapolis and St. Paul. These students constitute nearly 22 percent of total students in average daily membership (ADM) of the central cities. By contrast, the number of AFDC students in the suburban districts is only 2.5 percent of total suburban ADM.

While the amount of state categorical funds for special education is relatively small, the bulk goes to central cities, where the concentration of special education students is the greatest, comprising 13.8 percent of total ADM. (See Table 6). The second highest concentration is in outstate larger city districts, 9.5 percent, with the lowest proportion, 3.9 percent, found in small agricultural areas.

In fiscal 1972, as in 1971, the metropolitan areas of the state benefit more from homestead credit payments than the balance of the state. Central cities receive $103, slow growth suburbs $111, and rural non-agricultural districts $47. On the other hand, rural areas have higher payments from other tax relief programs, including the personal property

TABLE 5

AFDC STUDENTS AS PERCENT OF ADM
1971-72

TYPE OF DISTRICT	Number of AFDC Students	Percent AFDC Students of Total State AFDC	Percent AFDC Students of District ADM
Urban			
1) Central Cities	23,124	45.7%	21.8%
2) Slow Growth Suburbs	3,342	6.6	2.5
3) Fast Growth Suburbs	3,426	6.8	2.5
4) Larger Cities	4,525	8.9	5.9
5) Smaller Cities	4,955	9.8	4.3
Rural			
6) Iron Range	1,005	2.0	3.9
7) Large Agric. (Over 500 ADM)	6,346	12.5	3.2
8) Small Agric. (Under 500 ADM)	1,006	2.0	2.5
9) Rural Non-Agric.	2,869	5.7	6.6
STATE TOTAL	50,599	100.0%	--

TABLE 6

SPECIAL EDUCATION STUDENTS AS PERCENT OF ADM
1971-72

TYPE OF DISTRICT	
Urban	
1) Central Cities	13.8%
2) Slow Growth Suburbs	7.2
3) Fast Growth Suburbs	7.8
4) Larger Cities	9.5
5) Smaller Cities	7.5
Rural	
6) Iron Range	7.1
7) Large Agric. (Over 500 ADM)	5.7
8) Small Agric. (Under 500 ADM)	3.9
9) Rural Non-Agric.	5.4
STATE AVERAGE	7.8%

exemption aid, tax exempt land aid, the agricultural differential, and taconite aid. Through these various programs, small agricultural districts receive $118, central cities receive $37.

Compared with fiscal 1971, payments under the tax relief programs (including homestead credits) are reduced by an average of $24. The sharpest reduction occurs in the larger city districts which receive $43 less per pupil. Small agricultural districts, however, are receiving $22 more in tax relief in fiscal 1972 than in 1971.

The overall impact of the revised state program was to increase state aid by $127, an increase of 24 percent between fiscal 1971 and 1972. Since the foundation program increased by $130, other program aid collectively was reduced by $4. The central cities receive $121 more per pupil, while suburban areas receive only $64 more. In general, rural areas get considerably more state aid than urban areas. Slow and rapidly growing suburbs receive, respectively, only 11.8 percent and 12.2 percent more state aid in fiscal 1972 as compared to a 26.1 percent increase for the central cities and 35 percent for rural non-agricultural districts. Without the AFDC program, the central cities would have received only $60 more per pupil. Three programs, as shown in Table 4, contribute to the higher state funding to rural areas--the revised foundation program, the tax relief programs, and transportation aid.

FEDERAL REVENUES

Federal revenues on a statewide basis amounted to $33 per pupil in fiscal 1972, comprising only 3 percent of total education revenues in Minnesota. This was a slight increase over the $30 per pupil received by the state in fiscal 1971.

The bulk of federal revenues go to three types of districts. Central cities receive $57 per pupil. Small agricultural districts and rural non-agricultural districts receive $58 and $60 per pupil, respectively. The suburban areas receive only $15 per pupil, which is less than 2 percent of their total revenues. Most of these federal funds are for Title I of the Elementary and Secondary Education Act. The percentage of Title I students in the state is 13.9 percent. The highest concentration is in small agricultural school districts where they total 31 percent of the population. Thus, despite their high property wealth, these districts have high proportions of "disadvantaged" students. Title I aid is distributed on the basis of the number of students from low income families (as determined by the 1960 Census), as well as the number of students from families who are recipients of AFDC aid. It is likely that the high number of Title I recipients in small agricultural districts reflects the percentage of low income families as shown in the 1960 Census of Population rather than high percentages of families who are AFDC recipients. In the two central cities, Title I students comprise 27.6 percent of all students, in the large agricultural districts 19.6 percent. The percentage of Title I students is low in the suburban districts, where they comprise less than four percent of total ADM.

IMPACT OF TOTAL REVENUE

The impact of the distribution of total state revenues is somewhat equalizing since, in general, more state funds go to districts with low local revenues. The disparities between districts in local revenues are substantial. The addition of state funds reduces these disparities

although it does not eliminate them.[4] Federal revenues have no overall impact on disparities in per pupil revenues.

The combined impact of all three sources of revenue on the categories of districts is shown in Figure 4. The disparities among districts in total per pupil revenues actually decreased between fiscal 1971 and 1972.[5]

In comparison with other states that have been studied, the extent of interdistrict disparities in total revenues is below the level of Delaware, California, Michigan, New York, Colorado, and New Hampshire. Only North Carolina and Washington have less disparities in per pupil revenues.[6] Even prior to the enactment of new legislation, the disparities in Minnesota were less than in other states previously examined by The Urban Institute.

CHANGES IN SOURCES OF FUNDING--FISCAL 1971 AND 1972

The percentage of revenue for education in 1971-72 that came from state sources is 63 percent, from local sources 34 percent and from federal funds 3 percent. This reflects a sharp increase in the amount of funds from the state. In 1970-71 the state share was 49 percent and the local

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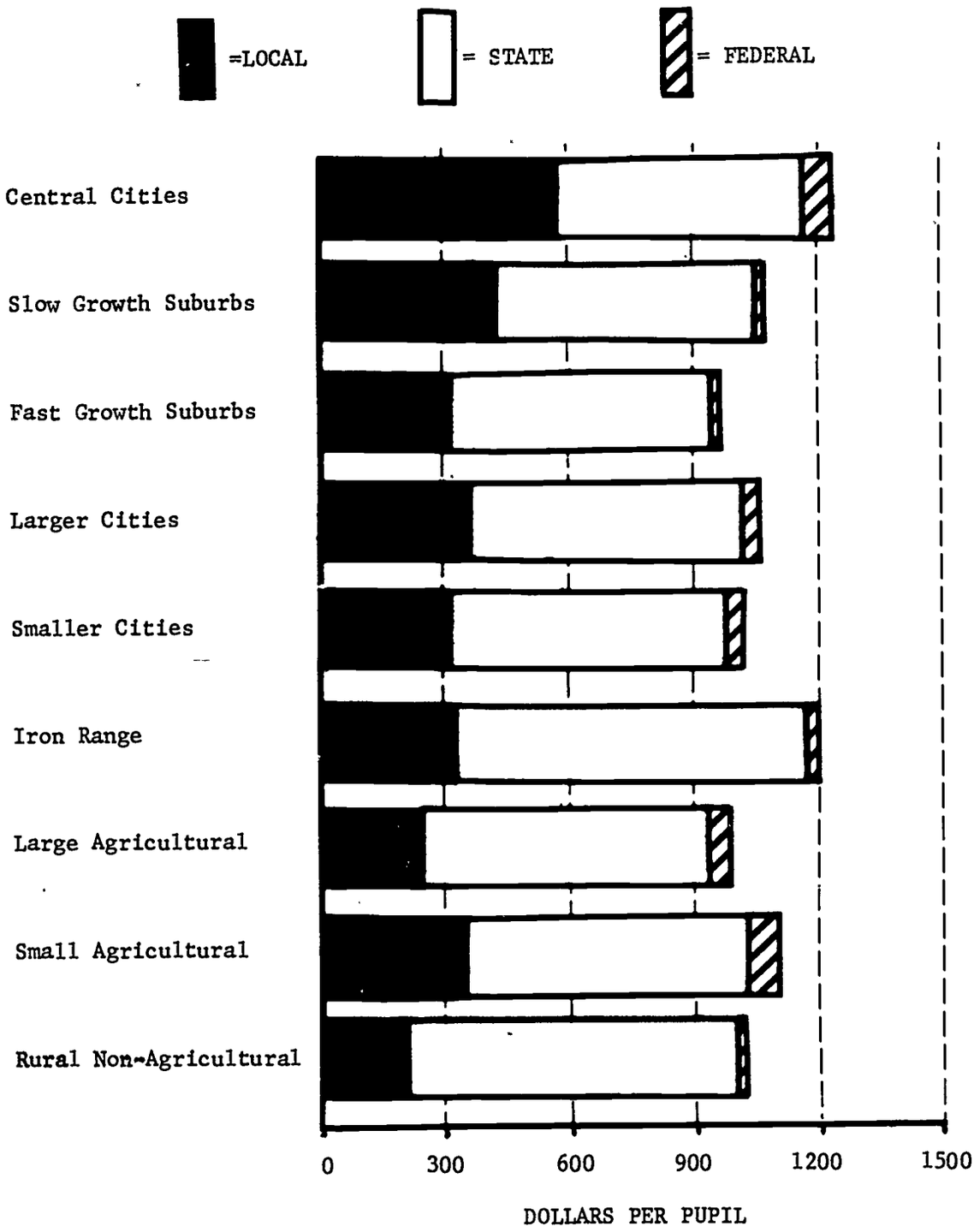
4. The statewide coefficient of variation for local revenues is .467 which is higher than some other states recently studied--e.g., Washington, California, Michigan, and New York. See B. Levin, T. Muller, W. Scanlon, and M. Cohen, Public School Finance: Present Disparities and Fiscal Alternatives, Washington, D.C., The Urban Institute, 1972, Table II-3, p. 47. This coefficient of variation drops to .123 when state funds are added.

5. The coefficient of variation in fiscal 1972 for combined local-state revenue is .123, a reduction from the previous year of .140. This is the reverse of the pattern of total per pupil expenditures where the coefficient of variation increased from .117 to .125 between the two years. Per pupil expenditures, which reflect actual outlays during the school year, are a more precise measure of disparities since revenues may be accumulated over a two-year interval.

6. Levin et al., Public School Finance ..., p. 47.

Figure 4

TOTAL REVENUES BY SOURCE OF FUNDING
(in dollars per pupil)
1971-72



share 48 percent. The changes in the proportions of state and local revenues between the two years are shown in Figure 5. The proportion of federal funds remained the same, a little over 3 percent of total revenue. The dollar amounts of local revenue declined in all categories of districts between 1971 and 1972. State revenues increased by an average of $126 per pupil. Non-metropolitan areas of the state received greater amounts of this increase in state aid. Figure 6 shows the changes in dollar amounts of state and computed local revenues between fiscal 1971 and fiscal 1972.

CORRELATION BETWEEN PER PUPIL EXPENDITURES AND WEALTH MEASURES

Many of the school finance cases decided in the last year or two have held that despite the equalizing nature of the state aid program, the "system (of financing education) as a whole generates school revenue in proportion to the wealth of the individual district." [7]

An examination of Minnesota's per pupil expenditures shows that there is a strong positive correlation between state-local expenditures per pupil and district property wealth. That correlation actually increased between fiscal 1971 and 1972.[8] However, when only residential property values are considered, the correlation between district wealth and expenditures is not as strong and actually decreased between fiscal 1971 and 1972.[9] Hence, non-residential property values per pupil influence expenditure levels

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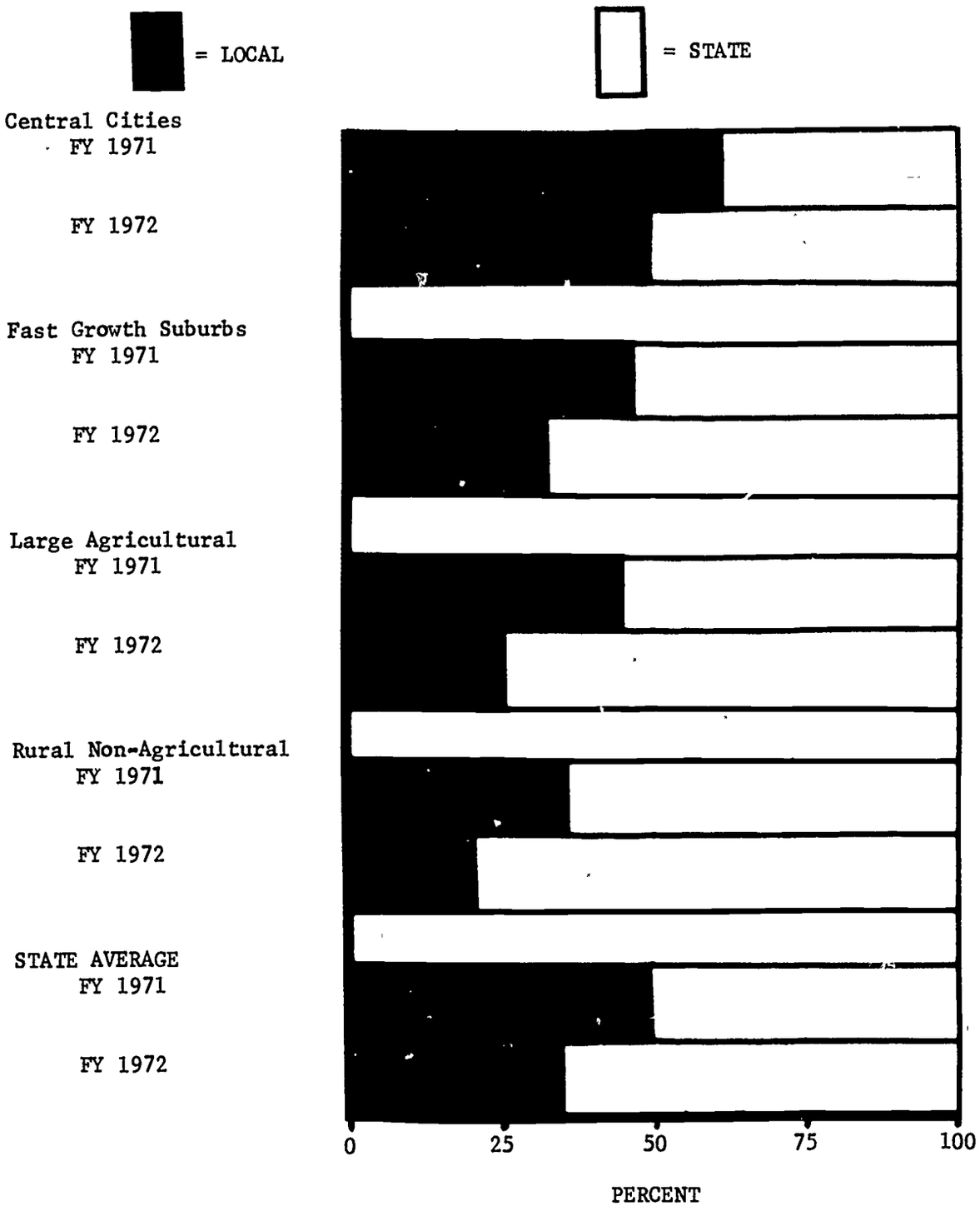
7. Serrano v. Priest, 487 P. 2d 1241, 1251 (1971). Accord, Van Dusartz v. Hatfield, 334 F. Supp. 870 (D. Minn 1971).

8. The correlation coefficient for 1971 was .30 (significant at the 1 percent level), while the correlation coefficient increased to .37 in 1972.

9. r = .22 in 1971, dropping to .19 in 1972.

Figure 5

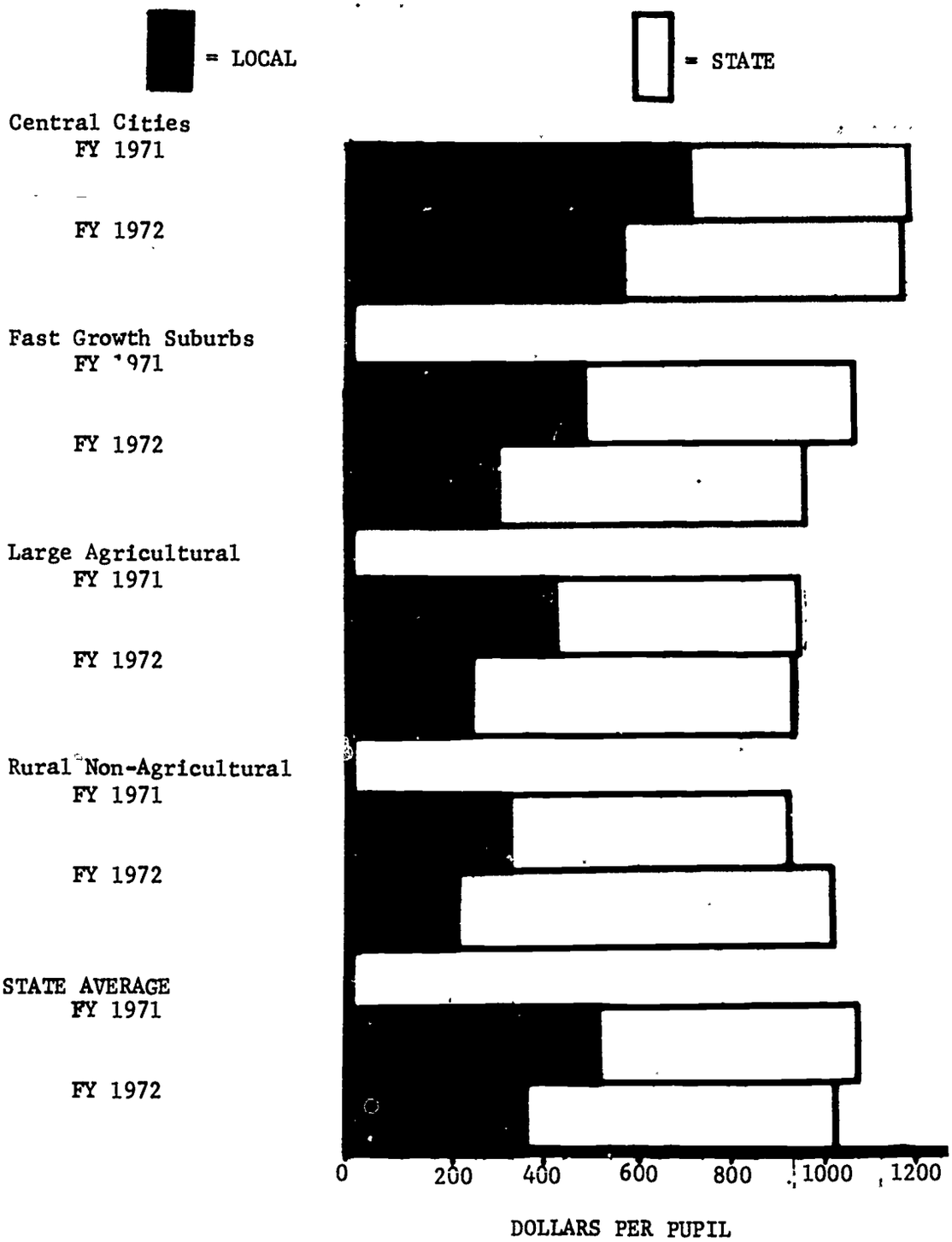
STATE SHARE OF TOTAL EDUCATION REVENUES*
PRE AND POST LEGISLATIVE CHANGES
(in percents)



*Federal funds excluded.

Figure 6

STATE SHARE OF TOTAL EDUCATION REVENUES*
PRE AND POST LEGISLATIVE CHANGES
(in dollars per pupil)



*Federal funds are excluded. Local revenues for FY 1972 are computed revenues (see text) and not those actually reported, which accounts for the fact that FY 1971 revenues seem to be higher than those for FY 1972.

more strongly than does residential property wealth. The distribution of the type of property by category of district is shown in Table 7 for 1970-71. In contrast to property wealth, there is little correlation between per capita income and level of expenditures. Various measures of income and property wealth and their differences by type of district are examined in greater detail in Appendix A.

When per pupil revenues are disaggregated by source of funding, we find a strong correlation between local revenues and per pupil property values for 1970-71. The importance of property wealth in determining levels of local revenues per pupil increased as the local share of all education revenues decreased. Thus, the strong positive correlation between property wealth and level of local revenues increased between fiscal 1971 and 1972.[10] Similarly, the negative correlation between property wealth and total state aid increased between fiscal 1971 and 1972, indicating the increased importance of the foundation program, which allocates state funds in inverse proportion to property wealth.[11]

WHO PAYS FOR EDUCATION: ANALYSIS OF STATE AND LOCAL TAX BURDEN

Determining the impact of state and local tax structures for financing education on the tax burden of various income groups is an important aspect in examining a state's system of financing schools. The education tax burden is defined as the percent of personal income being taxed for the

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10. r = .68 in fiscal 1971 and .86 in 1972, significant at the 1 percent level.

11. r = -.61 in 1971 and -.73 in 1972.

TABLE 7

PERCENT SHARE OF PROPERTY WEALTH BY TYPE OF LAND USE

TYPE OF DISTRICT	1970-71					
Urban	Residential	Commercial	Industrial	Farm & Acreage	Other	Total
Central Cities	54.8%	31.9%	10.2%	0%	3.1%	100.0%
Slow Growth Suburbs	71.9	16.8	7.9	2.3	1.1	100.0
Fast Growth Suburbs	70.6	16.8	5.8	4.4	2.4	100.0
Larger City	62.3	19.6	7.1	7.9	3.1	100.0
Smaller City	48.2	11.9	8.7	23.4	7.8	100.0
Rural						
Iron Range	55.3	10.1	10.6	2.9	21.1	100.0
Large Agric. (Over 500 ADM)	28.4	6.0	1.6	58.6	5.4	100.0
Small Agric. (Under 500 ADM)	11.4	3.4	1.0	81.6	2.6	100.0
Rural Non-Agric.	42.5	10.4	2.2	22.3	22.6	100.0
STATE TOTAL	51.2%	14.9%	5.9%	22.7%	5.3%	100.0%

support of public education. Analysis of the tax burdens for various income groups in the State of Minnesota shows whether the tax structure for financing education is progressive--a larger percentage of the income of high income households is taxed for education than that of low income households; regressive--a larger percentage of the income of low income households is taxed; or proportional--all income groups contribute the same percentage of their income for the support of education.

The combined state and local tax burden, as shown in Figure 7, is regressive, although only mildly so for households earning over $7,500. The lowest income households shown, those earning between $2,000 and $2,999, pay 10.6 percent of their income for education compared to 6.1 percent for those earning incomes of $15,000 and over.

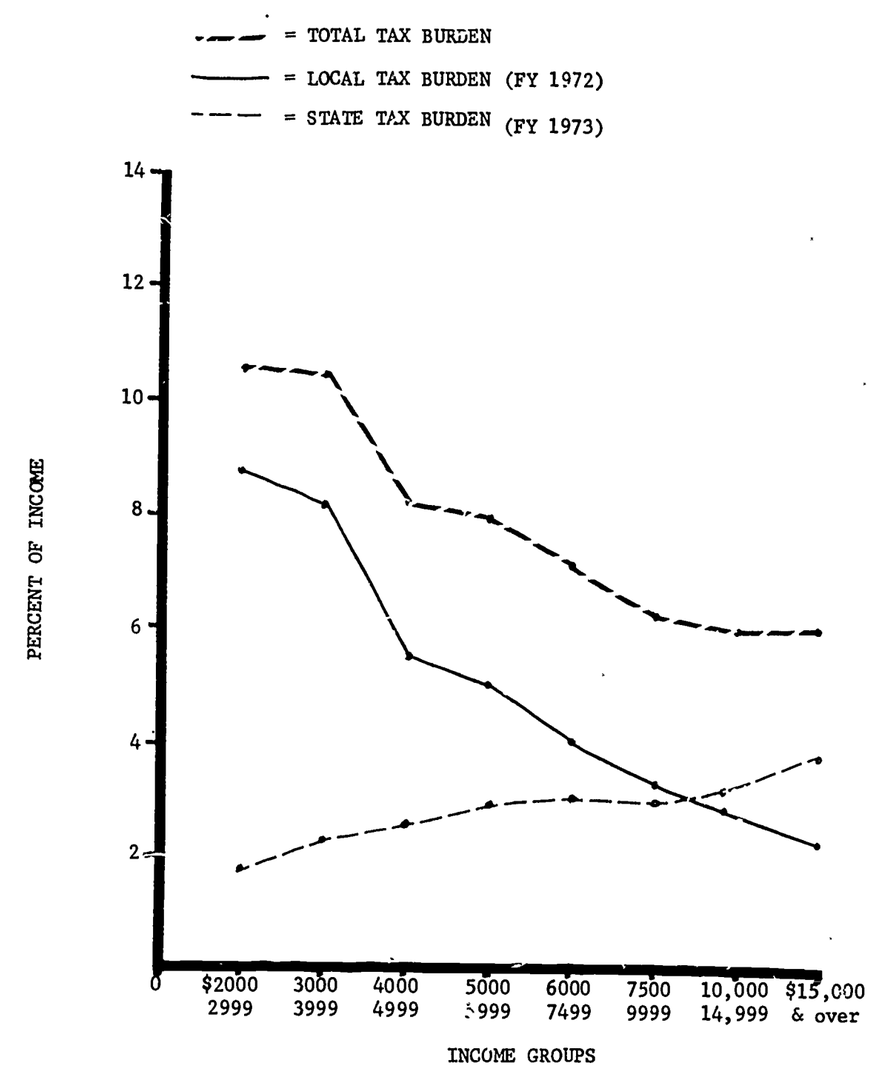
This regressive pattern for the combined tax structures is due to the impact of the local property tax, since Minnesota state taxes, comprised largely of personal and corporate income taxes and a sales tax, are progressive in their effect. (See Figure 7.) That is, the percentage of the income of the lowest income households that is taxed through these taxes for education[12] is 1.8 percent, while the percentage of income of those earning $15,000 and over that is taxed is 3.8 percent. The computation of the state tax burden is shown in Appendix B, Table B-6.

Viewed separately, the impact of state taxes on urban and rural households presents different patterns. Low income rural households pay a higher percentage of their income for education through state taxes than their urban counterparts. The converse is true of higher income households, with those in urban areas paying more state taxes to support education

12. In fiscal 1972, 42.6 percent of state general fund tax receipts are allocated to elementary and secondary education.

Figure 7

STATE/LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP
(Urban and Rural Combined)



than high income households in rural areas. See Tables B-4 and B-5 in Appendix B.

Local taxes for education, essentially property taxes, show a strong regressive pattern. (See Figure 7.) The lowest income group shown pays 8.8 percent of its income in property taxes for education compared to only 2.3 percent for the $15,000 and over income group.

Another important question to answer is what effect has the new legislation had on the overall burden for education by income group. To examine this issue, the tax burdens for different income groups for state and local taxes combined for the year prior to the enactment of the 1971 Omnibus Tax Bill and the year following its enactment are examined. Figure 8 shows the total tax burden for the support of education for the fiscal 1971 year and for the current year. This comparison, also made in Table 8, indicates that the new law, by increasing state taxes (which, since they are progressive, tax a higher percentage of the income of high income households) and by reducing local property taxes (which place a heavier burden on low income households) has resulted in a slightly less regressive total tax structure.

The overall effect of the new legislation, therefore, is a redistribution in tax burden from lower income to higher income families. Households earning under $5,000 pay less for education now than households in this income group paid in 1970, while those earning $7,500 or more pay proportionately more under the new law. Reduced property tax rates in fiscal 1973 will accelerate this trend. Thus, if effective property tax rates are reduced by an additional 20 percent, the total tax burden for education would become progressive for income groups above $7,500.

Figure 8

COMPARISON OF TAX BURDEN FOR EDUCATION BY INCOME GROUP
PRE AND POST LEGISLATIVE CHANGES

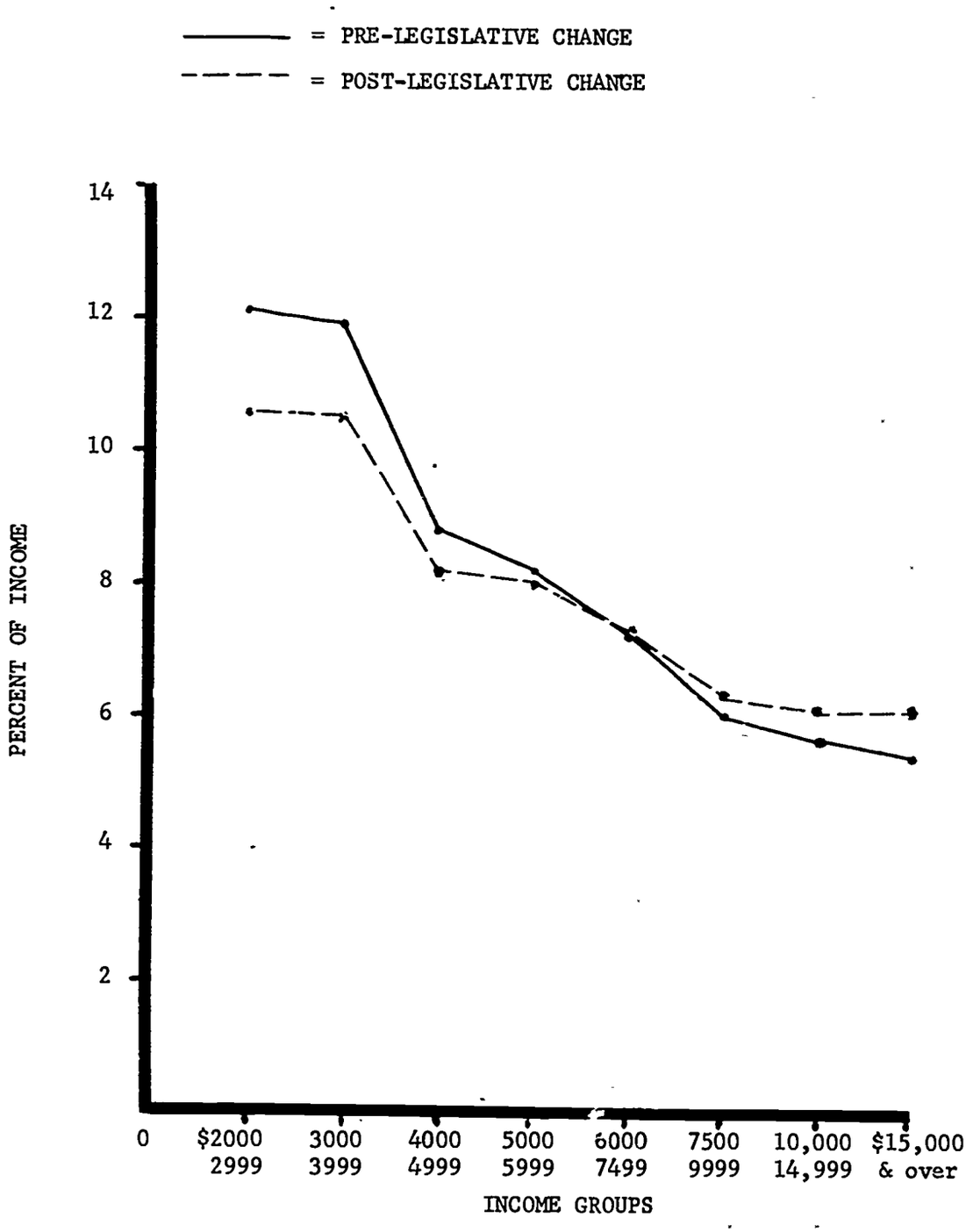


TABLE 8

COMBINED STATE AND LOCAL TAX BURDEN FOR EDUCATION

PERCENT OF INCOME

INCOME GROUPS

	$2,000 2,999	$3,000 3,999	$4,000 4,999	$5,000 5,999	$6,000 7,499	$7,500 9,999	$10,000 14,999	$15,000 & Over
Pre Legislative Enactment	12.1%	11.9%	8.8%	8.2%	7.2%	6.0%	5.7%	5.4%
Post Legislative Enactment	10.6	10.5	8.2	8.0	7.2	6.3	6.1	6.1
Differences	- 1.5%	- 1.4%	- 0.2%	- 0.2%	-	+ 0.3%	+ 0.4%	+ 0.7%

SUMMARY OF REVENUE ANALYSIS

As a result of the 1971 Omnibus Tax Bill, the state share of revenues for public elementary and secondary education (excluding federal funds) increased from 50.4 percent to 65.1 percent. Under the new Act, the state, in fiscal 1972, distributes an average of $663 per pupil to local districts. Local tax rates for education (for both capital and operating expenditures) decreased by 20 percent from the previous year. Increased state funds which are derived from the progressive state tax structure and lower rates on the regressive local property tax result in a redistribution in tax burden from lower-income to higher-income households. As state aid increases still further in 1972-73 and the local tax rates are reduced, the combined tax structure will become even less regressive.

EXPENDITURES

Total current operating expenditures by category of district range from a high of $1,254 per pupil in the central cities to a low of $950 in rural non-agricultural districts. (See Figure 9.) The significant issue, however, is not the differences in the dollars being spent but in the educational services being provided. In order to make some determination of the level of services provided in each district, per pupil expenditure differentials are examined by function.

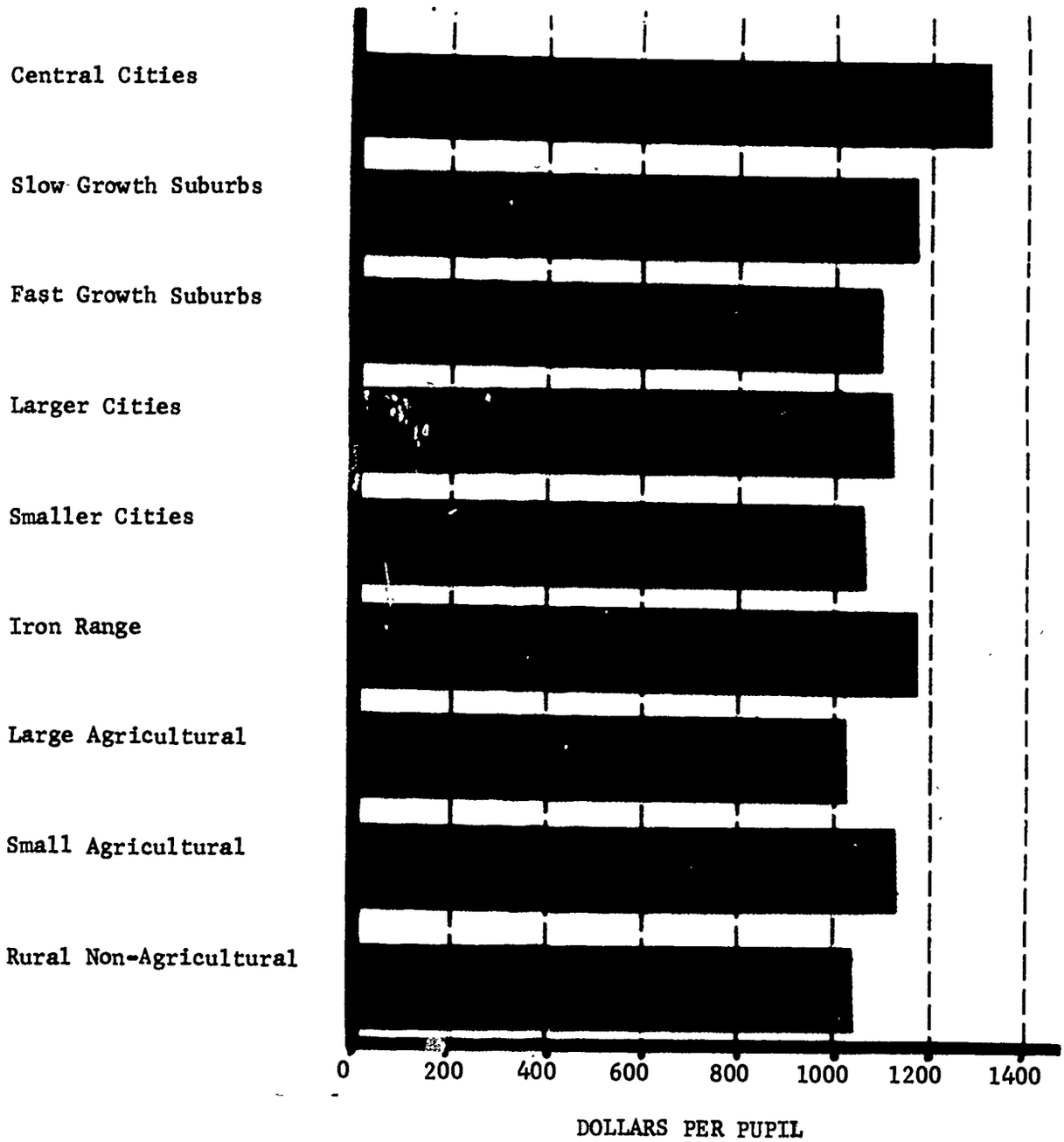
Further, in most analyses of school expenditures, a principal source of confusion has been the failure to make a clear distinction between spending differences among school districts which are due to variations in price or wages and those which result from differences in the level of service. The analytic approach taken in this study is intended to clarify this distinction. Thus, cost differentials are analyzed by examining to what extent disparities in overall expenditures can be attributed to quantitative differences in the level of education resources provided to students, such as pupil-teacher ratios and average years of teacher experience, and to what extent expenditures differentials can be attributed to price or wage differences for comparable resources.

EXPENDITURE ANALYSIS BY FUNCTION

There are three broad categories of current operating expenditures. These are shown by type of district in Tables 9 and 10 and in Figure 10. The major component is instructional expenditures. This category includes expenditures for principals and supervisors, for classroom teachers, for other instructional personnel--special education teachers, guidance counselors, librarians, etc.,

Figure 9

TOTAL PER PUPIL EXPENDITURES*
1971-72



*Reflects all governmental sources of funds.

TABLE 9

PER PUPIL EXPENDITURE DIFFERENTIALS BY FUNCTION

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL INSTRUCTIONAL	71.3%	71.2%	71.1%	71.6%	69.8%	60.4%	68.2%	64.9%	64.2%	69.5%
TOTAL NON-INSTRUCTIONAL	18.7	18.5	18.5	18.0	19.9	23.3	22.1	25.0	24.8	20.2
TOTAL FIXED CHARGES	10.0	10.4	10.4	10.3	10.2	16.3	9.7	10.0	10.9	10.3
TOTAL CURRENT OPERATING EXPS.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100.0%

TABLE 10

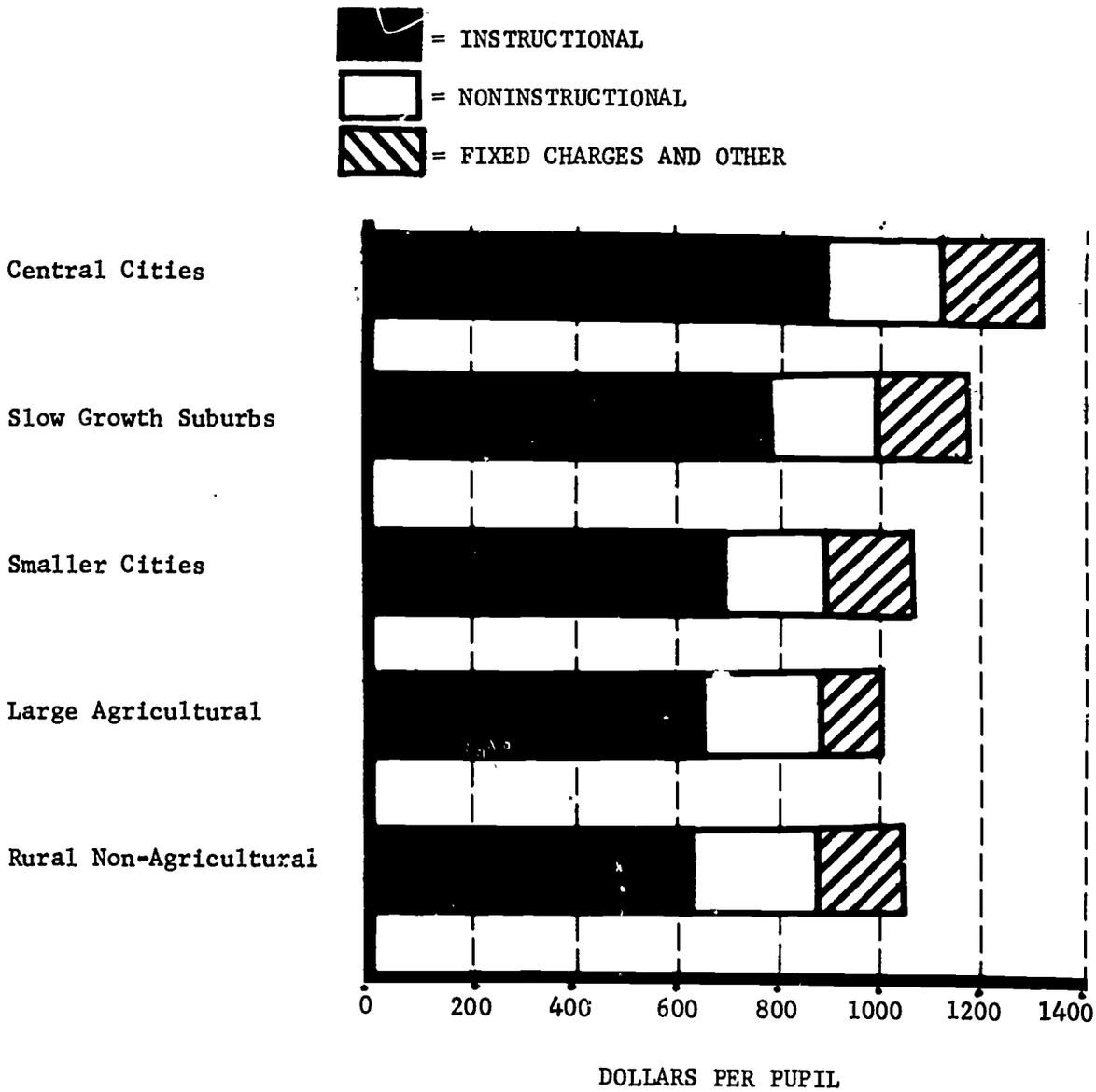
EXPENDITURES BY FUNCTION: PERCENT OF TOTAL COE

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL INSTRUCTIONAL	$ 894	$ 786	$ 729	$ 769	$ 696	$ 716	$ 651	$ 681	$ 631	$ 731
TOTAL NON-INSTRUCTIONAL	234	203	192	183	196	276	211	265	239	212
TOTAL FIXED CHARGES	126	116	106	113	103	138	95	104	104	109
TOTAL CURRENT OPERATING EXPS.	$1,254	$1,105	$1,027	$1,071	$ 995	$1,130	$ 957	$1,050	$ 974	$1,053

Figure 10

EXPENDITURES BY FUNCTION
(in dollars per pupil)
1971-72



and for largely non-salary instructional items such as supplies and textbooks. This category includes clerical staff as well.

The second category, non-instructional expenditures, includes expenditures for such functions as administration, transportation, plant operation, plant maintenance, and other items such as health, food services, and attendance.

The third major category, fixed charges and other miscellaneous services, includes such items as employee benefits, community services, insurance costs, and costs for security (guards or mechanical devices and alarms). Ideally, instructional personnel benefits should be included in the category of instructional expenditures but most school accounting systems are such that expenditures for this item cannot be readily separated from other fixed charges.

INSTRUCTIONAL EXPENDITURES

For the school year 1971-1972, the statewide average per pupil expenditure for instruction is $731. As shown in Table 11, classroom teacher salaries account for 71.7 percent of this total, other instructional staff 14.9 percent, principals 5.2 percent, and other instructional costs 8.2 percent.

As shown in Table 12, total instructional expenditures are the highest in the central city districts, $894 per pupil, and rural non-agricultural districts average the lowest, $631. Per pupil expenditures for classroom teachers do not vary as sharply. Central cities and slow growth suburbs have nearly identical outlays for classroom teachers, $560 and $564 per pupil respectively, while rural non-agricultural districts average $478. However, there are sharp differences in outlays for other instructional staff, varying from $205 per pupil in central cities to only $45 in small agricultural districts. While 22.9 percent of all instructional costs in central cities are associated with other instructional staff, only 6.6 percent of instructional funds are allocated for this purpose in small agricultural districts.

TABLE 11

EXPENDITURES FOR INSTRUCTIONAL ITEMS: PERCENT OF TOTAL INSTRUCTION

	1971-72									
	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Ranges	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL INSTRUCTIONAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Principals	6.2	4.9	5.1	4.7	4.9	4.3	5.1	6.2	5.7	5.2
Classroom Teachers	62.6	71.7	69.7	72.7	72.6	75.3	76.2	77.8	75.6	71.7
Other Instructional Staff	22.9	15.8	17.7	15.5	13.8	12.7	9.7	6.6	10.4	14.9
Other Instructional Exps.	8.2	7.5	7.4	8.2	8.8	7.7	9.1	9.5	8.2	8.2

TABLE 12

EXPENDITURES FOR INSTRUCTIONAL ITEMS IN DOLLARS PER PUPIL

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL INSTRUCTIONAL	$894	$786	$729	$769	$696	$716	$650	$682	$632	$731
Principals	55	39	37	36	34	31	33	42	36	38
Classroom Teachers	560	564	508	551	505	539	495	530	478	524
Other Instructional Staff	205	124	129	119	96	91	63	45	66	109
Other Instructional Exps.	73	59	54	63	61	55	59	65	52	60

Expenditures for principals are the highest in central cities at $55 per pupil, lowest in Iron Range districts at $31 per pupil. Other instructional costs are highest in central cities, lowest in rural non-agricultural areas.

Instructional expenditures increased from the preceding year by $53 per pupil on a statewide basis. The major change between fiscal 1971 and 1972 was in other instructional personnel. This item shows an increase of 17.2 percent in per pupil expenditures for other instructional personnel compared to an increase of less than 6 percent for classroom teachers.[14]

NON-INSTRUCTIONAL EXPENDITURES

Non-instructional expenditures, which include administration, plant operation, plant maintenance, transportation, and miscellaneous items, show considerably less variation among categories of districts compared to instructional outlays. These expenditures are shown in Table 13. By far the largest proportion of non-instructional expenditures, 44.3 percent on a statewide basis, is allocated to plant operation. (See Table 14.) In fiscal 1972 the highest per pupil expenditures for non-instructional items, $234, occurred in central cities, the lowest, $189, in the larger city districts.

Administrative costs are highest in small agricultural areas due to diseconomies associated with the small size of school districts.[13] The lowest administrative costs per pupil are in the outstate larger city districts followed by slow growth suburban and outstate smaller city districts.

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13. A superintendent of a district with 100 students can have approximately the same salary as a superintendent of a district with 2,000 students. Obviously, the per pupil cost of a superintendent is much higher in the smaller district. Thus the higher administrative costs per pupil in the smaller school district are said to be due to "diseconomies of scale."

14. This high increase may, in part, be due to the changes in reporting instructions on the Annual Financial Report between fiscal 1971 and 1972. In 1972, salaries for special education teachers were listed as a separate category. In 1971, these salaries could have been listed either under classroom teacher salaries or under other instructional personnel.

TABLE 13

EXPENDITURES FOR NON-INSTRUCTIONAL ITEMS IN DOLLARS PER PUPIL

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL NON-INSTRUCTIONAL	$234	$203	$192	$189	$196	$276	$211	$265	$239	$212
Administration	34	27	31	22	27	39	39	76	47	34
Transportation	19	44	39	40	58	61	75	79	83	53
P t Operation	113	103	99	98	86	137	77	86	87	94
Plant Maintenance	30	20	16	21	18	32	15	21	17	20
Other Non-Instructional	37	8	7	8	7	8	4	4	4	10

TABLE 14

EXPENDITURES FOR NON-INSTRUCTIONAL ITEMS: PERCENT OF TOTAL NON-INSTRUCTION

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL NON-INSTRUCTIONAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Administration	14.5	13.3	16.2	11.6	13.8	14.1	18.5	28.7	19.7	16.0
Transportation	8.1	21.6	20.3	21.2	29.6	22.1	35.5	25.8	34.7	25.0
Plant Operation	48.2	50.7	51.6	51.9	43.9	49.6	36.5	32.5	36.4	44.3
Plant Maintenance	12.8	9.9	8.3	11.1	9.2	11.6	7.1	7.9	7.1	9.4
Other Non-Instructional	15.8	3.9	3.6	4.2	3.6	2.9	1.9	1.5	1..	4.7

Plant operation costs are high in central cities, $113 per pupil, and even higher in the Iron Range districts, $137. In both types of districts, the average age of school buildings may be high, necessitating higher operating costs. Plant maintenance expenditures follow the pattern of plant operation expenditures. In the case of both plant operation and maintenance, part of the lower cost in rural areas may be associated with lower wages.[15]

Transportation costs are lowest in the central cities, $19 per pupil, and highest in low-density rural non-agricultural areas, $83. Lower transportation costs in urban areas offset their generally higher plant operation costs. Other non-instructional costs such as health, food services, and attendance are significant only in central cities, which spend $37 per pupil compared to about $6 in other school districts.

Between fiscal 1971 and 1972 the only significant increase in non-instructional expenditures statewide were increased plant operation costs--$8 more per pupil than in the previous year--and transportation costs of $5 more per pupil. The cost of other functions did not increase substantially.

FIXED CHARGES

Fixed charges in fiscal 1972, as shown in Table 15, averaged $113 per pupil, an increase of 11 percent over fiscal 1971. The largest item among fixed charges is certified employee retirement, $63, which accounts for nearly 56 percent of the total. (See Table 16.) Non-certified employees' retirement is $15 per pupil, 13.3 percent of the total. Other fixed charges amount to $33 per pupil, the remaining 29.2 percent.

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15. For example, average hourly wages for custodians in the central city districts are $4.20 an hour compared to $2.47 in selected rural districts. Mechanics receive $5.76 per hour in central cities and only $3.31 in rural areas. Minnesota School Boards Association, Study on Non-Certified Salaries and Related Information, 1971-72.

Table 15

EXPENDITURES FOR FIXED CHARGES IN DOLLARS PER PUPIL

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL FIXED CHARGES	$137	$116	$106	$113	$103	$138	$95	$104	$104	$113
Certified Employee Retirement	72	67	60	65	63	63	58	65	56	63
Non-Certified Employee Retirement	20*	14	14	18	12	16	11	13	15	15
Other	45	35	32	30	28	59	26	26	33	33

*This figure is for St. Paul only since the City of Minneapolis contributes to the non-certified employee retirement in that school district.

TABLE 16

EXPENDITURES FOR FIXED CHARGES: PERCENT OF TOTAL FIXED CHARGES

1971-72

	URBAN					RURAL				TOTAL STATE AVERAGE
	Central Cities	Slow Growth Suburbs	Fast Growth Suburbs	Larger Cities	Smaller Cities	Iron Range	Large Agric. (Over 500 ADM)	Small Agric. (Under 500 ADM)	Rural Non-Agric.	
TOTAL FIXED CHARGES	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Certified Employee Retirement	52.6	57.8	56.6	57.5	61.2	42.8	61.1	62.5	53.9	55.8
Non-Certified Employee Retirement	14.6	12.1	13.2	15.9	11.7	11.6	11.6	12.5	14.4	13.3
Other	32.8	30.2	30.2	26.6	27.2	42.8	27.4	25.0	31.7	29.2

*This figure is based on St. Paul data only since the City of Minneapolis contributes to the non-certified employee retirement in that school district.

Fixed charges are the highest in Iron Range districts, followed by central cities which, since they have the highest salaries, also have the highest retirement costs. Large agricultural districts have the lowest fixed charges.

FACTORS EXPLAINING INTERDISTRICT DIFFERENCES IN PER PUPIL EXPENDITURES

A substantial portion of the difference in per pupil expenditures between central cities and their suburbs and the total gap between central city and rural school districts is attributable to differences in expenditures for instructional functions. In order to determine the degree of their contribution to expenditure differentials, the following factors which contribute to expenditure differentials are surveyed.

1. Teacher characteristics--education and experience levels
2. Pupil-teacher ratios
3. Classroom teacher salaries
4. Other instructional staff
5. Principal salaries
6. Employee benefits

First it is determined to what extent disparities in total instructional expenditures for the school year 1971-72 can be attributed to quantitative differences in the level of education resources provided to students, such as the number of teachers and average years of teacher experience. These quantitative differences are then controlled in order to determine how much of the disparities in per pupil expenditures are related to price or wage differences for comparable resources.

TEACHER CHARACTERISTICS

AVERAGE EDUCATION LEVEL OF TEACHERS. As shown in Table 17 and Figure 11, there are considerable differences in the proportion of teachers with no degrees, with bachelor's degrees, and with advanced degrees among the nine types of districts in Minnesota. Although the statewide average for teachers without degrees is only 3.9 percent of all teachers, the percentage in small agricultural districts averages as high as 11.6 percent.

The highest proportion of teachers with advanced degrees is found in the outstate larger city districts, over 25 percent. Almost 20 percent of all teachers have advanced degrees in central cities and slow growth suburbs. By contrast, comparatively few teachers in rural districts have advanced degrees.

AVERAGE EXPERIENCE LEVELS OF TEACHERS. The average length of tenure of all teachers in the state, regardless of degree, is 10.8 years. However, average length of tenure varies on the basis of both level of education and type of district. Teachers with no degrees, who no doubt entered the school system prior to enactment of state certification requirements, average 21.1 years of experience throughout the state while in central cities they have an average of 31 years of experience. Teachers with master's degrees average 14.5 years on a statewide basis and those with bachelor's degrees only 9.8 years. This suggests that most teachers with advanced degrees continued their education after they had begun teaching. This may explain the higher proportion of advanced degrees in urban as opposed to rural areas, since in rural areas degree-giving institutions of higher education are not as readily available. Teachers in fast growth suburbs with B.A. degrees have the least amount of tenure and, with the exception of the small agricultural districts, teachers with M.A. degrees also have the least tenure in fast grow h suburbs.

TABLE 17

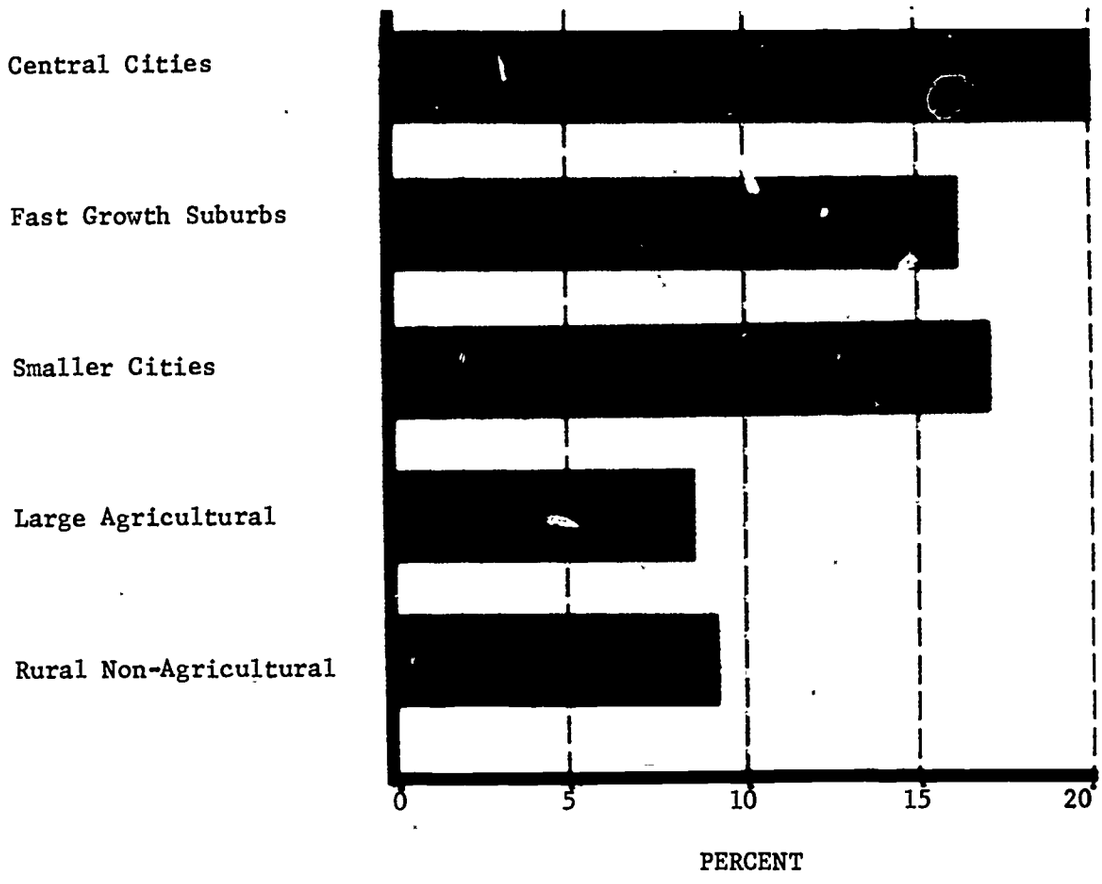
AVERAGE EDUCATION LEVEL OF TEACHERS
1971-72

TYPE OF DISTRICT	Percentage of Teachers With No Degree	Percentage of Teachers With B.A. Degree	Percentage of Teachers With M.A. Degree	Percentage of Teachers With Ph.D. Degree
Urban				
1) Central Cities	1.4%	78.6%	19.9%	*
2) Slow Growth Suburbs	1.6	79.0	19.[illegible]	0.2%
3) Fast Growth Suburbs	1.1	82.8	16.[illegible]	0.1
4) Larger Cities	1.5	73.4	25.0	0.2
5) Smaller Cities	3.9	79.3	17.1	*
Rural				
6) Iron Range	5.2	79.2	15.5	*
7) Large Agric. (Over 500 ADM)	7.5	85.2	8.6	*
8) Small Agric. (Under 500 ADM)	11.6	85.3	5.5	*
9) Rural Non-Agric.	6.7	85.5	9.1	*
STATE AVERAGE	3.9%	81.1%	15.7%	*

*Less than 0.1 percent.

Figure 11

TEACHER EDUCATION: PERCENT ADVANCED DEGREES*
1971-72



*Teachers with a master's degree or above.

This phenomenon can be explained by the fact that as the population increases rapidly, the need for new schools arises. These new schools are staffed with large numbers of teachers who have just completed their education. With the exception of fast growth suburbs, there is little difference in average length of tenure between urban and rural areas. Average experience by type of district is given in Table 18.

Since teacher salaries rise with seniority and additional salary increments are awarded for advanced degrees, or even for the mere accumulation of additional credits, it is obvious that districts with higher proportions of experienced teachers and/or teachers with advanced degrees will have higher costs. Subsequent sections of this chapter isolate the dollar differences in per pupil expenditures which result solely from differences in education and experience levels of teachers rather than from base salary differences or differences in the number of teachers.

PUPIL-TEACHER RATIOS

Pupil-teacher ratios, shown in Table 19 for the school year 1971-72, show little variation either among types of districts or within each grouping. Even an affluent suburb such as Golden Valley has a pupil-teacher ratio close to the statewide average. (Anoka a suburb with low property values, does have higher than average pupil-teacher ratios--23.1 to 1.) The major exception is found in the small agricultural districts which, due to diseconomies of scale, have a 17.0 to 1 ratio compared to the state average pupil-teacher ratio of 21.2 to 1. Central cities have a slightly lower ratio compared to either slow or fast growth suburbs, probably due to additional personnel provided with federal Title I funds. Pupil-teacher ratios as a deviation from the statewide average ratio are shown in Figure 12 for selected categories of districts.

TABLE 18

AVERAGE YEARS EXPERIENCE

1971-72

Type of District	Teachers With No Degree	Teachers With B.A. Degrees	Teachers With M.A. Degrees	Teachers With Ph D. Degrees	Average Years Experience All Teachers
Urban					
1) Central Cities	31.0 yrs.	10.7 yrs.	16.7 yrs.	5.0 yrs.	12.1 yrs.
2) Slow Growth Suburbs	21.5	9.8	14.9	7.0	11.3
3) Fast Growth Suburbs	19.8	7.8	12.2	13.0	8.4
4) Larger Cities	17.2	11.3	14.5	2.9	12.2
5) Smaller Cities	18.2	10.6	14.8	0.0	11.6
Rural					
6) Iron Range	17.4	11.3	14.8	0.0	13.6
7) Large Agric. (Over 500 ADM)	19.5	9.3	14.9	0.0	10.5
8) Small Agric. (Under 500 ADM)	19 7	9.3	11.5	0.0	10.6
9) Rural Non-Agric.	21.9	10.9	13.6	0.0	11.5
STATE AVERAGE	21.1 yrs.	9.8 yrs.	14.5 yrs.	6.3 yrs.	10.8 yrs.

TABLE 19

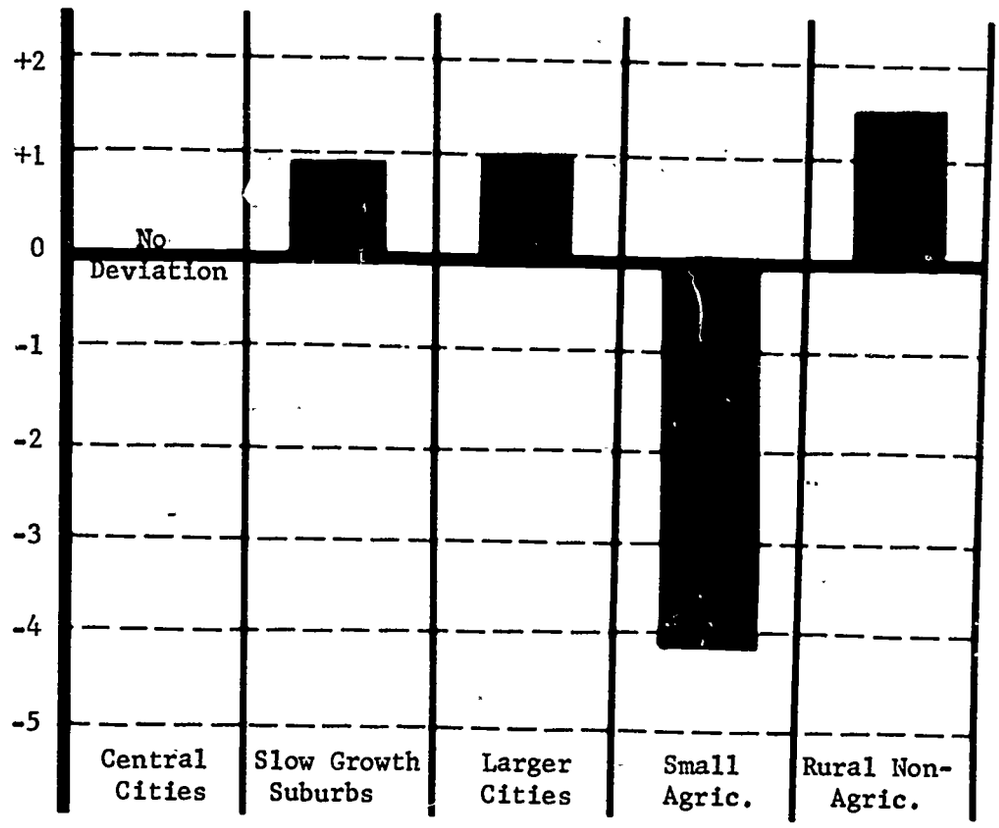
PUPIL-TEACHER RATIOS
1971-72

Type of District	
Urban	
1) Central Cities	21.2
2) Slow Growth Suburbs	22.1
3) Fast Growth Suburbs	21.8
4) Larger Cities	22.4
5) Smaller Cities	21.3
Rural	
6) Iron Range	20.4
7) Large Agric. (Over 500 ADM)	20.2
8) Small Agric. (Under 500 ADM)	17.0
) Rural Non-Agric.	22.6
STATE AVERAGE	21.2

Figure 12

PUPIL-TEACHER RATIOS
(deviation from statewide average)
1971-72

STATEWIDE
AVERAGE=21.2



CLASSROOM TEACHER SALARIES

MINIMUM AND MAXIMUM SALARIES. Starting salaries for teachers with B.A. degrees and no experience show little variation among school districts. The lowest starting salaries are in small agricultural districts, while central cities and their suburbs have almost identical starting salaries. Maximum salaries for teachers with B.A. degrees show more deviation. The variation in salaries paid for maximum experience has increased in the two-year period under study. Starting salaries for teachers with master's degrees also show relatively little variation, but there are sharp differences in maximum salaries. In 1971-72 these ranged from an average of $10,485 in small agricultural districts to $15,914 in the central cities, a difference of about $5,000 for teachers with master's degrees and maximum longevity. The range in salary schedules for selected categories of districts is shown in Figure 13.

AVERAGE SALARIES. The statewide average teacher salary, shown in Table 20, was $10,206 in fiscal 1972, with considerable deviation by degree level and type of district.[16] Among those teachers with master's degrees the highest average salary, $14,737, is found in slow growth suburbs. In metropolitan areas, the difference between average salaries for teachers with B.A degrees and teachers with M.A. degrees averages $4,000, but this gap decreases to about $2,500 in rural areas. The lowest average salaries for teachers, $8,255, are in small agricultural districts.

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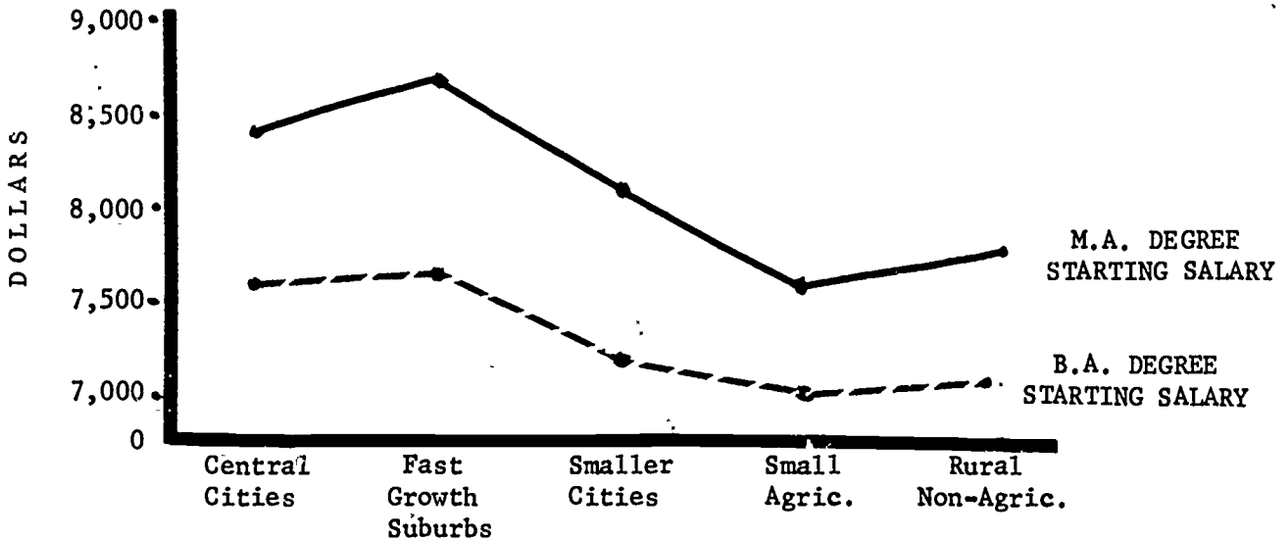
16. Average salaries are provided by individual school districts. These values are lower than the values computed from per pupil expenditures for teachers.

Figure 13

COMPARISON OF TEACHER SALARY SCHEDULES
STARTING - MAXIMUM SALARIES
1971-72



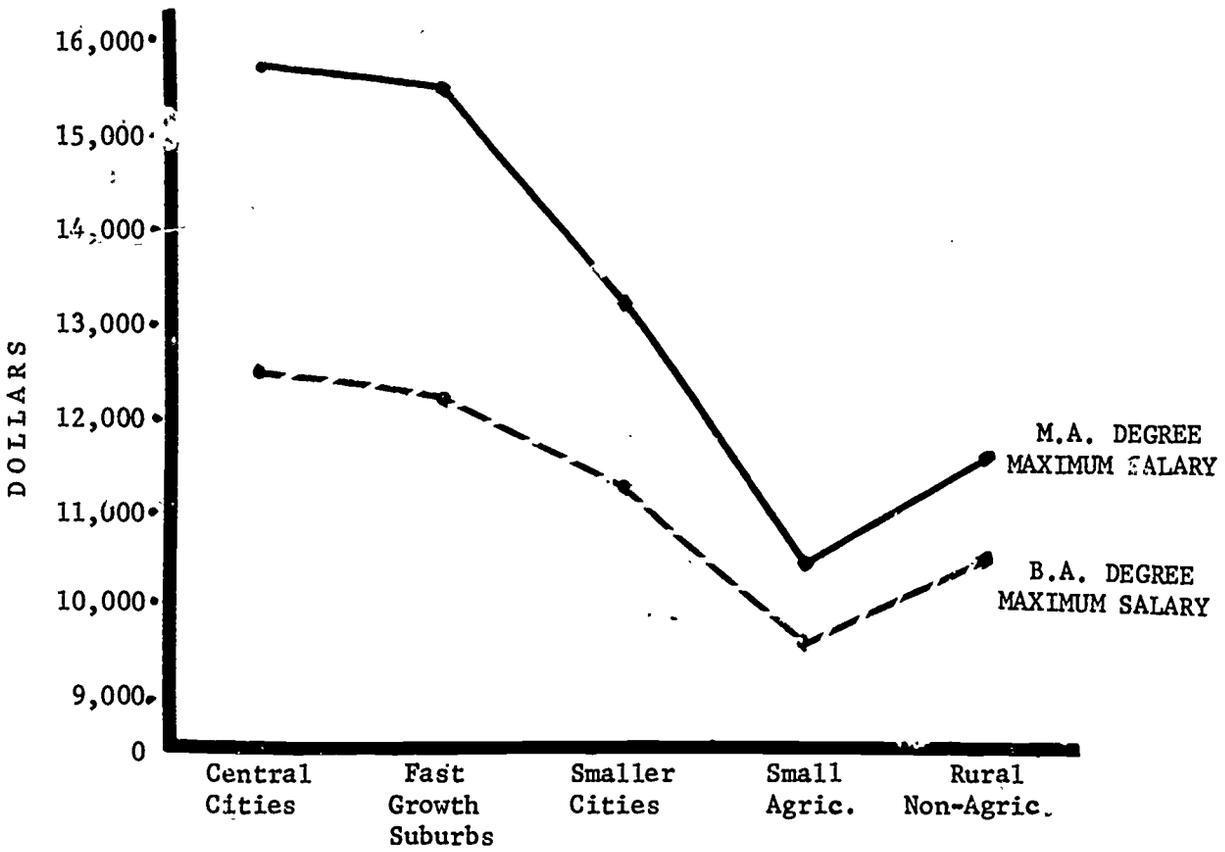


TABLE 20

TEACHER SALARY SCHEDULES

1971-72

TYPE OF DISTRICT	Bachelor's Degree		Master's Degree		Average Teacher Salary All Teachers
Urban	Min.	Max.	Min.	Max.	
1) Central Cities	$7,600	$12,539	$8,426	$15,914	$11,317
2) Slow Growth Suburbs	7,664	11,813	8,666	15,575	11,420
3) Fast growth Suburbs	7,664	12,182	8,696	15,530	10,449
4) Larger Cities	7,250	11,490	8,081	13,966	10,937
5) Smaller Cities	7,217	11,258	8,183	13,192	10,067
Rural					
6) Iron Range	7,149	11,821	8,260	13,028	10,314
7) Large Agric. (Over 500 ADM)	7,178	10,577	7,913	12,009	8,974
8) Small Agric. (Under 500 ADM)	7,048	9,643	7,615	10,485	8,255
9) Rural Non-Agric.	7,104	10,476	7,811	11,615	9,145
STATE AVERAGE	$7,388	$11,412	$8,257	$13,871	$10,206

SALARY INCREASES BETWEEN FISCAL 1971 AND FISCAL 1972. One issue in the increasing cost of education is to what degree higher expenditures represent increases in the salaries of teachers already employed by the school system rather than increases in the educational services due to the hiring of more teachers, other instructional personnel, etc.

Starting salaries for teachers with B.A. degrees and no experience increased only 2.6 percent throughout the state between 1971 and 1972. Increases were the greatest in fast growth suburbs, 3.2 percent, and lowest in outstate larger city districts, 1.7 percent. Maximum salaries for teachers with B.A. degrees show about the same statewide increase, 2.6 percent. However, central city teachers increased their maximum salaries by 4.8 percent, slow growth suburbs only 0.9 percent.[17]

Increases in salaries for teachers with master's degrees and no experience also averaged 2.6 percent statewide. Again, there were wide differences by type of district, with larger city districts showing only a 0.9 percent increase, Iron Range districts a 5.1 percent increase.

The highest salary increases were for teachers with master's degrees and maximum experience, 3.5 percent. The two central cities increased their maximum salaries by 6.1 percent, rural non-agricultural districts by only 2.3 percent between fiscal 1971 and fiscal 1972. In general, the gap in salaries between urban and rural areas for teachers with advanced degrees actually increased during this time interval. However, the range of increases in teacher salary schedules, statewide, are very small, indicating that the

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17. The coefficient of variation increased from 0.8 to 0.14, indicating greater differences between districts in salaries in fiscal 1972 than in fiscal 1971.

increase in teacher salaries between fiscal 1971 and 1972 was not a significant factor in the increase in per pupil expenditures between the two years.

IMPACT OF SALARIES ON COST DIFFERENTIALS. Having examined the factors affecting differences in per pupil expenditures for classroom teachers--the largest item among the various functions in the educational budget--the effect of quantitative differences in resources on total expenditure differences can be separated from the effect of price variation.

Figure 14 documents the per pupil expenditure differences attributable to the unequal distribution among districts of experienced teachers and teachers with advanced degrees, even if there were no wage differences for teachers of equivalent education and experience levels (that is, the assumption is that a uniform salary schedule is imposed throughout the state) and identical pupil-teacher ratios existed in all categories of school districts.

The reverse approach would be to control for the per pupil expenditure differences attributable to differences among districts in their proportions of teachers with advanced degrees and seniority and for differences in pupil-teacher ratios, in order to determine to what extent differences in expenditures are the result solely of differing price (wages for teachers of equivalent education and experience levels). To do this, both teacher education and experience levels and pupil-teacher ratios are equalized.[18]

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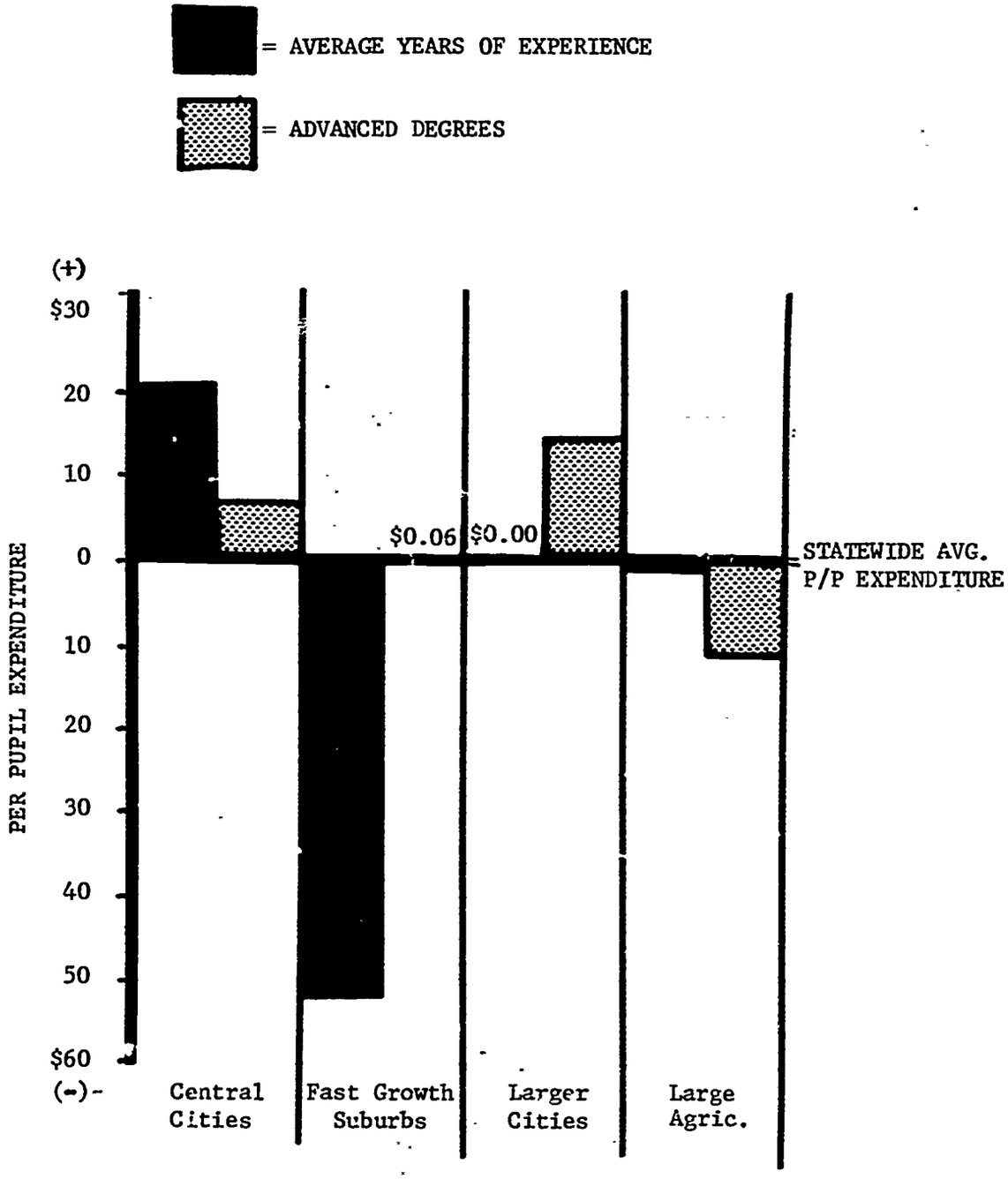
18. For purposes of this part of the analysis, differences in education and experience levels of teachers are treated as quantitative differences, just as are differences in the number of teachers. However, since at present the evidence is mixed as to a positive relationship between education and experience of teachers and pupil performance, policy makers should perhaps give greater weight to the fact that, under the present tenure system, districts with higher proportions of experienced teachers can do little to reduce their costs, regardless of whether such teachers make a difference in educational quality.

Figure 14

THE IMPACT OF TEACHER EDUCATION AND EXPERIENCE ON PER PUPIL EXPENDITURES
(As shown by deviation from statewide average)



The residual difference in expenditures is attributable to salary schedule differences for equivalent education and experience.[19] (See Appendix C for a detailed discussion of the methodology.).

In Table 21 comparisons are made between the actual per-pupil expenditure differences for classroom teachers (thus including quantitative differences in level of resources as well as price differences) and hypothetical expenditures after quantitative differences in teacher characteristics and pupil-teacher ratios have been equalized for central cities and their suburbs. Table 22 gives the result of a similar analysis contrasting central cities with both rural non-agricultural districts and small agricultural districts.

Slow growth suburbs, as shown in Table 21, average $3 more per pupil for classroom teachers than the central cities. When adjustments are made in pupil-teacher ratios and teacher characteristics (giving these suburbs the same level of resources which the central cities now have), the slow growth suburbs actually spend $34 more than the central cities. Of this amount, $10 is due to the higher proportion of experienced teachers in the cities and $24 to the lower pupil-teacher ratio in cities.

Once the quantitative differences in resources have been controlled for in this manner, a $37 per pupil gap in teacher expenditures remains--this is due to the higher salaries paid in slow growth suburbs for classroom teachers of equivalent education and experience.[20]

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19. These values may not be precise, since data on average contract salaries provided by districts for full-time equivalent teachers may include payments for summer school teaching and other payments.

20. This gap is not fully reflected in the salary schedules. Although the analysis assumes that the data on per pupil expenditures for classroom teachers reported by local districts to the state exclude outlays for other instructional staff, the results of the analysis indicate that slow growth suburban districts are including non-classroom teacher outlays in the category of classroom teachers, inflating the per pupil expenditures for this latter item.

TABLE 21

COMPARISON OF ACTUAL AND EQUALIZED PER PUPIL CURRENT OPERATING EXPENDITURES FOR TEACHERS

MINNEAPOLIS-ST. PAUL AND THEIR SUBURBS

1971-72

	Central Cities		Slow Growth Suburbs		Central Cities/ Slow Growth Sub Difference	Central Cities		Fast Growth Suburbs		Central Cities/ Fast Growth Sub Difference
	Actual	Equalized	Actual	Equalized		Actual	Equalized	Actual	Equalized	
ACTUAL TEACHER EXPENDITURES	$ 561		$ 564		- $ 3	$ 561		$ 508		+ $ 53
(Adjustment for Non-Degree Teachers)		$ 561	(+ 1)	$ 565	- $ 4		$ 561	(+ 1)	$ 509	+ $ 52
(Adjustment for Experience)		561	(+ 9)	574	- $13		561	(+26)	535	+ $ 26
(Adjustment for Advanced Degrees)		561	(+ 0)	574	- $13		561	(+ 9)	544	+ $ 17
(Adjustment for Pupil-Teacher Ratios)		561	(+24)	598	- $37		561	(+15)	559	+ $ 2
EQUALIZED TEACHER EXPENDITURES		$ 561		$598	- $37		$561		$559	+ $ 2

When similar adjustments are made between central cities and fast growth suburbs, meaning that these suburbs would have the same proportion of teachers with seniority and advanced degrees and the same pupil-teacher ratio,[21] there is almost no remaining difference in expenditures. This means that salaries for teachers of equivalent education and experience are almost the same in the two categories of districts.[22] Thus, the analysis shows that differences between central cities and fast growth suburbs in the proportions of teachers with advanced degrees and with experience explain 68 percent of the per pupil expenditure gap for teachers between the two types of districts. Pupil-teacher ratios explain 28 percent of the difference. After equalizing for these quantitative differences, lower salaries in the fast growth suburbs for equivalent education and experience are found to explain the remaining 4 percent.

In sum, the differences between the central cities and their suburbs in prices paid for teachers of equivalent background are not a significant factor explaining per pupil expenditure differentials for classroom teachers.

By contrast, as Table 22 shows, differences in wages for teachers of equivalent background between central city and rural districts, probably reflecting differences in the cost of living between the two areas, contribute substantially to the differences in per pupil expenditures for classroom teachers. In the case of rural non-agricultural districts, differences

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21. Adjusting the pupil-teacher ratio in fast growth suburbs to that of the central cities ignores the fact that in large part the additional classroom teachers in the cities are purchased with federal funds due to their higher proportion of disadvantaged students.

22. This conclusion is supported by a comparison of central city-fast growth suburban salary schedules.

TABLE 22

COMPARISON OF ACTUAL AND EQUALIZED PER PUPIL CURRENT OPERATING EXPENDITURES FOR TEACHERS

MINNEAPOLIS-ST. PAUL AND RURAL AREAS

1971-72

	Central Cities		Rural Non-Agric.		Central Cities/ Rural Non-Agric. Difference	Central Cities		Small Agricultural		Central Cities/ Small Agricultural Difference
	Actual	Equalized	Actual	Equalized		Actual	Equalized	Actual	Equalized	
ACTUAL TEACHER EXPENDITURES	$ 561		$ 478		+ $ 83	$ 561		$ 529		+ $ 32
(Adjustment for Non-Degree Teachers)		$ 561	(+ 5)	$ 483	+ $ 78		$ 561	(+ 4)	$ 533	+ $ 28
(Adjustment for Experience)		561	(+ 2)	485	+ $ 76		561	(+22)	555	+ $ 6
(Adjustment for Advanced Degrees)		561	(+16)	501	+ $ 60		561	(+31)	586	- $ 25
(Adjustment for Pupil-Teacher Ratios)		561	(+30)	531	+ $ 30		561	(-96)	490	+ $ 71
EQUALIZED TEACHER EXPENDITURES		$ 561		$ 531	+ $ 30		$ 561		$ 490	+ $ 71

in proportions of teachers with advanced degrees (a relatively minor factor in explaining central city-suburban differences) and in pupil-teacher ratios are also important. (As Table 22 shows, if the rural non-agricultural districts had the same proportion of teachers with advanced degrees as central cities, they would spend an additional $16 per pupil, and an additional $30 per pupil if their pupil-teacher ratios were reduced to that of the central cities.) Thus, salary differentials between the central cities and these rural districts are as large a factor (36 percent) in explaining differences in per pupil expenditures for classroom teachers as the differences in pupil-teacher ratios, while 28 percent of the overall difference is due to differences in teacher education and experience levels.

In the case of small agricultural districts, which because of diseconomies of scale have very low pupil-teacher ratios, the significant factors in explaining per pupil expenditure differentials for teachers, in addition to price differences, are the lower proportions of both experienced teachers and teachers with advanced degrees. The salary differential is much greater than that found in the other [illegible]es of districts examined--$71 per pupil.

In sum, while the principal factor explaining differences in per pupil expenditures for classroom teachers among districts within the metropolitan area is the proportions of teachers with advanced degrees and experience, the principal factors explaining the differences between central cities and rural non-agricultural districts are salary differences and the lower pupil-teacher ratios in the central city.

OTHER INSTRUCTIONAL STAFF

There are sharp differences in expenditures per pupil for non-classroom

instructional personnel between the central cities and rural areas. Central cities in fiscal 1972 are spending $205 per pupil for other instructional staff, suburbs $126, small agricultural districts $46, and rural non-agricultural districts $68. Expenditures for this function are a major factor contributing to total expenditure differentials between types of school districts.

Two major factors can account for these expenditure differentials--the number of other instructional personnel and their average salaries. Special education teachers are a significant class of other instructional staff, as shown in Table 23. They comprise 5.3 percent of the total instructional staff in the state. In the central cities 9.9 percent of the instructional staff are special education teachers, reflecting the much higher proportion of "special education" students.[23] The percentage of special education staff is considerably lower in both suburban and rural districts.

The number of teacher aides also varies among districts. In fiscal 1972, the two central cities had 1,092 teacher aides, or one aide per 97 students. The balance of the state had 2,401 teacher aides, or one aide per 293 students. In the central cities, federal funds, and more particularly Title I funds, are used extensively for teacher aides. For example, St. Paul allocated approximately $600,000 from federal funds for teacher aides in fiscal 1972.

In sum, part of the expenditure differential between central cities and the balance of the state can be attributed to the higher number of special education teachers and to the higher number of teacher aides (funded from

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23. See p. 30.

TABLE 23

SPECIAL EDUCATION TEACHERS

Type of District	Average Number of Teachers Per District	Average Teacher Salari[illegible]	[illegible]nditure [illegible]er Pupil	Percent of Other Instructional Staff Expenditures
Urban				
1) Central Cities	248.5	$11,290	$52	25.4%
2) Slow Growth Suburbs	15.4	10,710	19	15.2
3) Fast Growth Suburbs	17.9	9,366	22	17.3
4) Larger Cities	29.4	10,204	28	23.9
5) Smaller Cities	8.8	9,397	24	24.3
Rural				
6) Iron Range	6.4	8,769	28	31.1
7) Large Agric. (Over 500 ADM)	2.6	8,167	21	30.0
8) Small Agric. (Under 500 ADM)	0.4	8,833	10	23.3
9) Rural Non-Agricultural	2.5	8,421	21	36.8
STATE AVERAGE	5.1	$ 8,663	$ 22	19.7%

federal programs) in the central cities. On the basis of classroom teacher and special education teacher salary differentials, it is likely that other instructional staff salaries are about 20 percent lower in rural areas compared to metropolitan areas. Thus, in addition to differences in the number of personnel, salary differentials also contribute to the per pupil expenditure gap between urban and rural areas.

PRINCIPALS' SALARIES

As shown previously, expenditures for principals vary among districts, with the highest per pupil expenditures in central cities. Two factors contribute to differences in expenditures for this item--the number of students per principal and salaries for principals. Although the data are not available, it is reasonable to assume that the small school districts taken as a whole have disproportionately more principals, often part-time principals, than other school districts.

Average salaries for principals, as shown in Table 24, are the highest in central cities, followed by slow growth suburbs and then fast growth suburbs. Salaries for elementary and high school principals in small agricultural districts are less than half the level of central cities. In rural non-agricultural districts, salaries for principals are also substantially below the level of central cities. The salary differentials between urban and rural principals reflect the higher urban cost of living being offset somewhat by the higher proportion of rural principals.

EMPLOYEE BENEFITS

Charges for retirement plans, although grouped under fixed charges, are directly linked to salaries. Higher wages generally mean higher pension plan payments. Pension costs are grouped into those for certified personnel

TABLE 24

AVERAGE SALARIES OF PRINCIPALS

1971-72*

Type of District	Elementary Schools	Junior High Schools	High Schools
Urban			
1) Central Cities	$ 23,094	$ 24,344	$ 25,126
2) Slow Growth Suburbs	21,713	23,052	23,768
3) Fast Growth Suburbs	20,139	21,574	22,084
4) Larger Cities	17,141	20,028	21,910
5) Smaller Cities	16,124	17,675	18,819
Rural			
6) Iron Range	15,578	17,650	18,186
7) Large Agric. (Over 500 ADM)	12,860	14,268	15,718
8) Small Agric. (Under 500 ADM)	9,657	-	12,585
9) Rural Non-Agricultural	13,016	-	14,375

*Minnesota School Boards Association, Study on Salaries and Related Information 1971-72.

and non-certified personnel. Combined pension costs average $14 per pupil higher in central cities than in small agricultural areas and $18 higher than in rural non-agricultural areas. Fast growth suburban districts spend $19 less and slow growth suburban districts $11 less per pupil than do central cities for retirement plans. Thus, retirement costs are considerably higher in central cities, contributing to the higher total expenditure differentials.

Tables 25 and 26 show total current operating expenditures, both actual and after adjustments for quantitative differences in the level of services have been made. With the exception of special education teachers, non-classroom teacher expenditures are not adjusted for quantitative differences due to lack of data, and the only adjustment that can be made for special education teachers is for differences in pupil-special education teacher ratios.

In the case of central cities and slow growth suburbs, when adjustments are made for pupil-teacher ratios for both classroom and special education teachers and for the experience and education levels of classroom teachers, nearly one-half of the total current operating expenditures have been taken into account. The result of these adjustments is to reduce the dollar gap between central cities and slow growth suburban school districts by almost the same amount. If data were available to permit adjustments in non-teacher expenditures, presumably the gap would be reduced much further. This shows the importance of analyzing differences in levels of educational resources and services rather than absolute dollar differences. The gap between central cities and fast growth suburbs of $225 is similarly reduced--to $149.

TABLE 25

COMPARISON OF ACTUAL AND EQUALIZED PER PUPIL CURRENT OPERATING EXPENDITURES

MINNEAPOLIS-ST. PAUL AND THEIR SUBURBS
1971-72

	Central Cities		Slow Growth Suburbs		Central Cities/ Slow Growth Sub Difference	Central Cities		Fast Growth Suburbs		Central Cities/ Fast Growth Sub Difference
	Actual	Equalized	Actual	Equalized		Actual	Equalized	Actual	Equalized	
CURRENT OPERATING EXPENDITURES	$1,318		$1,165		+ $153	$1,318		$1,093		+ $225
Actual Teacher Expenditures	$ 561		$ 564		- $ 3	$ 561		$ 508		+ $ 53
(Adjustment for Non-Degree Teachers)			(+ 1)	$565	- $ 4			(+ 1)	$509	+ $ 52
(Adjustment for Experience)			(+ 9)	$574	- $ 13			(+ 26)	$535	+ $ 26
(Adjustment for Advanced Degrees)			(+ 0)	$574	- $ 13			(+ 9)	$544	+ $ 17
(Adjustment for Pupil-Teacher Ratios)			(+24)	$598	- $ 37			(+15)	$559	+ $ 2
Equalized Teacher Expenditures				$598	- $ 37				$559	+ $ 2
Total Non-Classroom Teacher COE	$ 757		$ 601		+ $156	$ 757		$ 585		+ $172
Total Non-Classroom Teacher Instructional Expenditure	$ 333		$ 222		+ $111	$ 333		$ 221		+ $112
Special Education Teachers	$ 52		$ 19		+ $ 33	$ 52		$ 19		+ $ 33
(Adjustment for Pupil-Teacher Ratios)			(+ 31)	$ 50	+ $ 2			(+ 25)	$ 44	+ $ 8
Other Instructional Expenditures*	$ 281		$ 203		+ $112	$ 281		$ 202		+ $ 156
Non-Instructional Expenditures*	$ 234		$ 203		+ $ 31	$ 234		$ 192		+ $ 42
Total Fixed Charges*	$ 126		$ 116		+ $ 10	$ 126		$ 106		+ $ 20
Miscellaneous Expenditures*	$ 64		$ 60		+ $ 4	$ 64		$ 66		- $ 2
TOTAL EQUALIZED COE		$1,318		$1,230	+ $ 88		$1,318		$1,169	+ $ 149
Less: Federal Funds*		-57		-14	+ $ 43		-57		-14	+ $ 43
EQUALIZED STATE-LOCAL COE		$1,261		$1,216	+ $ 45		$1,261		$1,155	+ $ 106

*Actual figures not adjusted for any quantitative differences.

TABLE 26

COMPARISON OF ACTUAL AND EQUALIZED PER PUPIL CURRENT OPERATING EXPENDITURES

MINNEAPOLIS-ST. PAUL AND SMALL AGRICULTURAL RURAL DISTRICTS

1971-72

	Central Cities		Small Agricultural		Central Cities/ Small Agricultural Difference
	Actual	Equalized	Actual	Equalized	
CURRENT OPERATING EXPENDITURES	$1,318		$1,125		+ $193
Actual Teacher Expenditures	$ 561		$ 529		+ $ 32
(Adjustment for Non-Degree Teachers)			(+ 4)	$ 533	+ $ 28
(Adjustment for Experience)			(+ 22)	$ 555	+ $ 6
(Adjustment for Advanced Degrees)			(+ 31)	$ 586	- $ 25
(Adjustment for Pupil-Teacher Ratios)			(- 96)	$ 490	+ $ 71
Equalized Teacher Expenditures				$ 490	+ $ 71
Total Non-Classroom Teacher COE	$ 757		$ 596		+ $161
Total Non-Classroom Teacher Instructional Expenditura	$ 333		$ 149		+ $184
Special Education Teachers	$ 52		$ 10		+ $ 42
(Adjustment for Pupil-Teacher Ratios)			(+ 32)	$ 42	+ $ 10
Other Instructional Expenditures*	$ 281		$ 139		+ $142
Non-Instructional Expenditures*	$ 134		$ 265		- $ 29
Total Fixed Charges*	$ 126		$ 104		+ $ 22
Miscellaneous Expenditures*	$ 64		74		- $ 10
TOTAL EQUALIZED COE		$1,318		$1,114	+ $204
Less: Federal Funds*		-57		-58	- 1
EQUALIZED STATE-LOCAL COE		$1,261		$1,056	+ $205

*Actual figures not adjusted for any quantitative differences.

By contrast, the gap between central cities and small agricultural areas is increased by this process--from $193 per pupil to $204. This is due to the very low pupil-teacher ratios in the latter category of district which masks the wide differential in salaries for teachers of equivalent education and experience.

SUMMARY OF EXPENDITURE ANALYSIS

Metropolitan areas have higher total per pupil expenditures than rural areas. Within metropolitan areas, the central cities by and large spend more than their suburbs. The major factor explaining expenditure differentials is the level of instructional expenditures. Non-instructional expenditures and fixed charges show little variation among the districts.

When the largest item in the educational budget, expenditures for classroom teachers, is analyzed, salary differences for teachers of equivalent education and experience are a significant factor in explaining per pupil expenditure differentials between metropolitan and rural districts. Within metropolitan areas, the proportions of teachers with advanced degrees and experience explain most of the differences in per pupil expenditures for teachers.

APPENDIX A

FISCAL CHARACTERISTICS

Differences in wealth, measured either in terms of income or property, have been found to relate to differences in per pupil expenditures for education. This appendix shows differences in wealth by type of district based on alternative criteria.

INCOME MEASURES

There are two sources of income data for Minnesota--state income tax data for all school districts and 1970 Census of Population data for central cities, suburban areas, and rural areas of the state. State income tax data are limited in that only those persons filing tax returns are included rather than the total population. In addition, data are provided on the basis of individual returns filed rather than on households. However, despite these limitations, Minnesota is practically the only state in the nation which collects income data on a school district level. The Census data more closely reflect incomes in a community, but are not presently available on a school district basis.

INCOME PER RETURN

Income per return filed averaged $6,944 in the state in 1970-1971. As shown in Table A-1, the highest income per tax return is found in slow growth suburbs ($9,282), followed by fast growth suburbs. The two central

TABLE A-1

INCOME MEASURES OF WEALTH

TYPE OF DISTRICT	1970-71 Per Capita Income	Index	Per Pupil Income	Index	Income Per State Tax Return	Index	Proportion of Units Over $10,000 Filing	Index
Urban								
1) Central Cities	$2,534	137	$17,399	211	$7,061	102	.22	92
2) Slow Growth Suburbs	2,500	135	9,836	119	9,282	134	.36	150
3) Fast Growth Suburbs	2,222	120	7,784	94	8,679	125	.39	163
4) Larger Cities	1,888	102	9,234	112	7,189	104	.25	104
5) Smaller Cities	1,707	92	7,252	88	6,283	91	.20	83
Rural								
6) Iron Range	1,664	90	6,046	73	6,630	96	.21	88
7) Large Agric. (Over 500 ADM)	1,257	68	4,831	59	5,349	77	.15	63
8) Small Agric. (Under 500 ADM)	841	46	3,671	45	4,313	62	.08	33
9) Rural Non-Agric.	1,027	56	3,758	46	5,297	76	.14	58
STATE TOTAL	$1,849	100	$ 8,250	100	$6,944	100	.24	100

city districts have an income of $7,061, the larger city districts, $7,189. Income in rural areas is sharply below the level of income in urban areas. Thus, for example, small agricultural districts show less than half the income of slow growth suburbs.

MEDIAN FAMILY INCOME

Median family income data obtained from the 1970 Census of Population indicate a considerably greater gap between the central cities and their suburbs than state income tax values. Table A-2 shows that family income in Minneapolis, which is given as $6,243 by the Census, is only a little more than half that of the suburban average. Income in rural areas is $6,645, slightly above the level found in Minneapolis. These data, as noted above, are unavailable for individual school districts.

PER CAPITA INCOME

Per capita income data are derived by dividing adjusted gross income for each school district by its 1970 population. Differences in per capita income between central cities and their suburbs are related to differences in household size. Due to the out-migration of families with school age children from central cities, the average household size in Minneapolis is 2.9 persons, in St. Paul 3.2 persons, and in the suburbs 3.9 persons. As a result, per capita income in the central cities is slightly above the suburban level. Because of even larger household size, rural areas have per capita income considerably below the metropolitan level.

PER PUPIL INCOME

Per pupil income wealth is derived by dividing income reported on state returns by ADM. Per pupil income in the central cities is $17,399--twice

TABLE A-2

WEALTH MEASURES
BASED ON U.S. CENSUS 1970

	Minneapolis	St. Paul	Suburbs	Rural Areas
Median House Value	$17,900	$18,700	$23,545	$9,200
Median Family Income	6,243	7,695	11,372	6,645
Average Per Capita Income	3,496	3,466	3,814	2,350

the state average--for two reasons: (1) The proportion of the school aged population in the central cities is below the average of suburbs and the balance of the state. (2) The proportion of students attending non-public schools in the two cities is about three times the level of their suburbs. Per pupil income is higher than the state average in slow growth suburbs and larger city districts. These areas also have a relatively high non-public school enrollment.

In fast growth suburbs, per pupil income ranges from a low of $5,543 in Centennial to a high of $26,678 in Golden Valley. In rural non-agricultural areas, the range is considerably narrower, from $2,913 in Menahga to $5,647 in LaCrescent.

PROPORTION OF TAX RETURNS ABOVE $10,000

An additional measure of income wealth is the proportion of tax returns filed showing incomes which exceed $10,000. In fast growth suburbs 39 percent of all returns, and in slow growth suburbs 36 percent of all ret are in this category. By contrast, only 22 percent of returns from central cities and 8 percent from small agricultural areas report income over $10,000. The low proportion of higher income returns in the central cities compared to their suburbs reflects a concentration of low income households and a higher proportion of small households (e.g., students and persons over 65) in the central cities.

PROPERTY WEALTH

PER PUPIL PROPERTY WEALTH

The statewide average per pupil property wealth in Minnesota is $33,090 for 1970-71. It ranges from $51,876 in the two central cities to an average

of only $18,988 in rural non-agricultural areas. Small rural agricultural areas have an average per pupil wealth of $41,062, considerably above the state average. Slow growth suburban districts, with an average property value of $33,620 per pupil, exceed the $27,547 average in fast growth suburbs. Table A-3 gives the per pupil property values for both residential and non-residential property in 1970-71.

The distribution of property wealth in Minnesota follows the pattern previously found in eight other states.[1] That is, central cities have the highest property values, followed by slow growth suburbs. The property wealth in smaller city districts exceeds fast growth suburbs, with rural areas having the lowest per pupil property levels. The causes for high per pupil property wealth in the central cities are due to the lower proportion of school age children relative to the total population, the higher proportion of non-public school enrollment and, most importantly, the concentration of industrial and commercial property.

COMPOSITION OF PROPERTY BASE

In 1971, as shown in Table 4 of Chapter 2, 51.2 percent of the property base in Minnesota was comprised of residential housing units, 22.7 percent of farm land, 14.9 percent commercial, 5.9 percent industrial, with the balance in other land uses such as recreation. In comparison, 60.1 percent of property nationally is residential, 11.0 percent acreage and farms, 15.3 commercial, and 9.4 percent industrial.[2]

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1. B. Levin, T. Muller, W. Scanlon, and M. Cohen, Public School Finance ..., Table II-4, p. 53.

2. Bureau of the Census, U.S. Department of Commerce, Taxable Property Values, 1967 Census of Governments, Vol. 2, Washington, D.C., 1968, Table 5, p. 35.

TABLE A-3

PER PUPIL PROPERTY WEALTH

1970-71

TYPE OF DISTRICT	Market Value of All Property	Index	Market Value of Residential Property	Index	Market Value of Non-Residential Property	Index
Urban						
1) Central Cities	$51,876	157	$28,428	168	$23,448	145
2) Slow Growth Suburbs	33,489	101	24,091	142	9,398	58
3) Fast Growth Suburbs	27,521	83	19,442	115	8,079	50
4) Larger Cities	30,719	93	19,141	113	11,578	72
5) Smaller Cities	30,502	93	14,709	87	15,793	98
Rural						
6) Iron Range	20,217	61	11,180	66	9,037	56
7) Large Agric. (Over 500 ADM)	31,785	96	9,039	53	22,746	141
8) Small Agric. (Under 500 ADM)	41,062	124	4,688	28	36,374	225
9) Rural Non-Agric.	18,988	57	8,076	48	10,912	68
STATE AVERAGE	$33,090	100	$16,941	100	$16,149	100

In the two central cities, commercial and industrial property comprise 42 per cent of the total property base. This, as noted above, explains in large part the high per pupil property values in the central cities. In the suburbs of the two cities, less than 30 percent of the property base is industrial and commercial. Small agricultural areas, which have high per pupil property wealth, have 81.6 percent of their property wealth in agricultural land. In rural districts, industrial-commercial property is comparatively unimportant.

The high concentration of commercial and industrial property in the central cities of Minnesota is consistent with the pattern found in other states.[3]

Figure 15 shows, for selected categories of school districts, the distribution of some of the wealth measures discussed in this Appendix.

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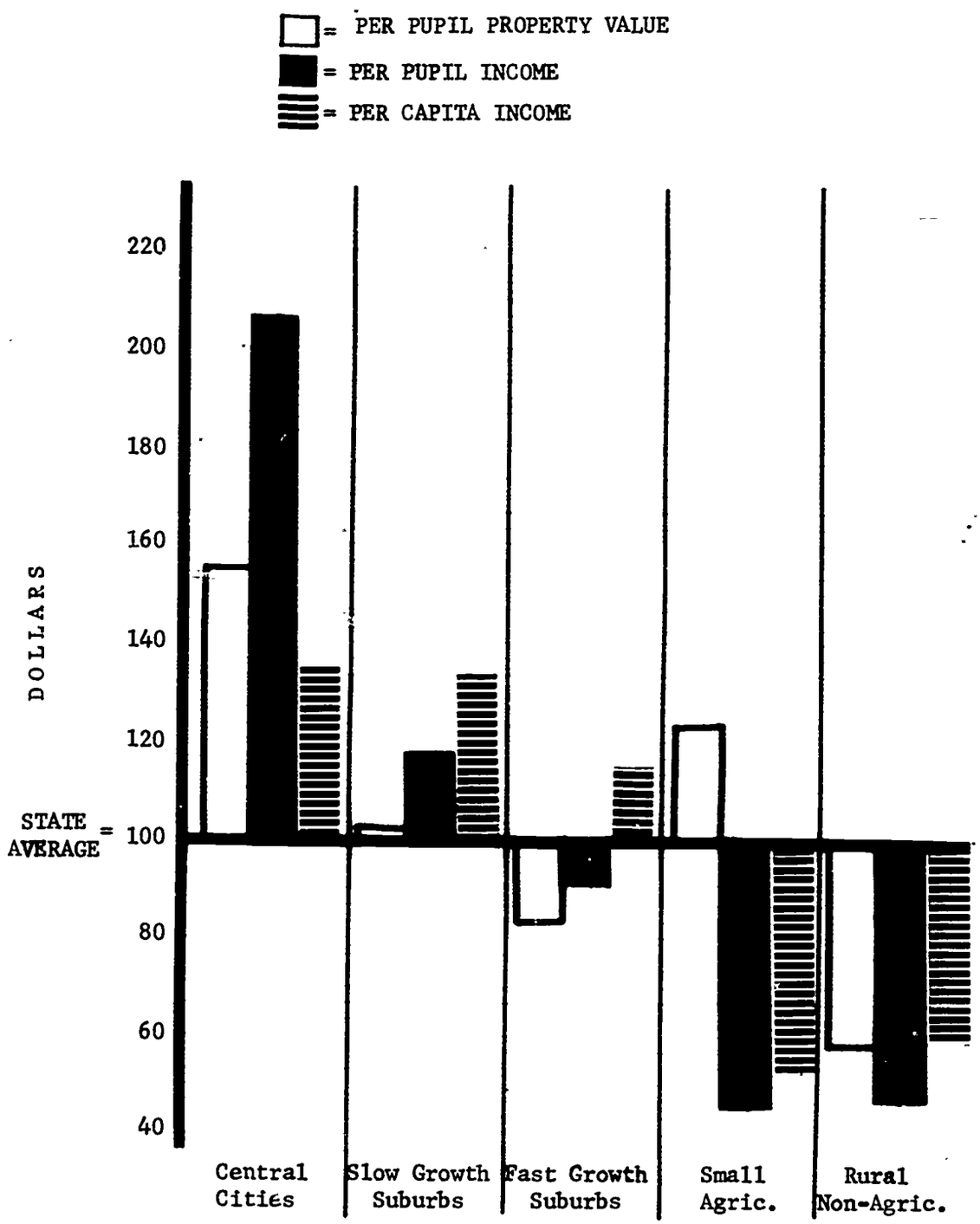
3. B. Levin, T. Muller, W. Scanlon, and M. Cohen, Public School Finance ..., p. 54.

Figure 15

MEASURES OF ABILITY TO PAY
1971-72



APPENDIX B

METHODOLOGY FOR TAX BURDEN ANALYSIS

In undertaking an analysis of the percent of household income contributed through both state and local taxes for the support of public elementary and secondary education, the methodology described below is used.

Tax burdens are computed for both urban and rural areas of Minnesota. The U.S. Department of Labor provides statistics on expenditure patterns for urban and rural non-farm households by region. These data are utilized in this analysis to estimate expenditures for items subject to state and local taxes.

STATE TAX ANALYSIS[1]

Households are grouped by money classes on the basis of the demographic and regional distributions provided in the Department of Labor Survey of Consumer Expenditures and Income, July 1964. State personal income taxes, grouped on the basis of income as reported on Minnesota state tax returns, are converted for this study into taxes paid by household units. Money income is comprised of transfer payments (such as social security or welfare payments) and adjusted gross income. The analysis does not, however, include

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1. Tables B-1 and B-2 show the state tax burden for education for 1970-71 for urban and rural areas, respectively, while Table B-3 shows the combined urban/rural tax burden. Tables B-4, B-5, and B-6 similarly show the state tax burden for education for fiscal year 1973.

the refundable personal income tax credit to persons aged 65 and over who own or rent their places of residence, since the distribution of persons who fall into this category has not been determined. However, the likely effect of such a tax credit would be to reduce tax burdens on lower income households.[2]

For purposes of this analysis, all major state tax payments by households into the state general fund are computed by income groups. The analysis reflects that part of the corporate income tax and selected other taxes that are shifted to out-of-state residents,[3] but does not include estimates of the proportion of corporate taxes shifted into the state. Thus total state tax burdens are somewhat understated in this analysis.

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2. The following table shows the proportion of households which are made up of persons 65 and over by income class for the Minneapolis SMSA, which includes approximately 10 percent of total state population.

	Aged Households as Percent of Total Minneapolis SMSA Households
$ 2,000 - 2,999	74.0%
3,000 - 3,999	63.1
4,000 - 4,999	53.8
5,000 - 5,999	44.0
6,000 - 7,499	29.5
7,500 - 9,999	13.3
10,000 - 14,999	5.7
15,000 and over	5.4

3. C. McLure, Jr., "The Interstate Exporting of State and Local Taxes," National Tax Journal, March 1967.

LOCAL TAX ANALYSIS[4]

Local property tax burdens have been allocated to income groups residing in owner-occupied units on the basis of the 1970 Census of Housing and Census of Population ratios of house value to income. The data are based on the Minneapolis-St. Paul metropolitan area. Tax burdens on owner-occupied housing reflect the inclusion of homestead credits. Rural owner-occupied household tax burdens are adjusted for lower assessments on farm household residential property.

For households which rent, monthly rent payments have been converted to estimate values of rented units by the use of the gross rent multiplier concept.[5] The tax on these units, based on their estimated values, is shifted forward under the assumption that owners of rental property pass on the property tax to the renters.

The following example illustrates the process used in this analysis. Assuming that a household in an urban area earning $10,000 owns a $16,000 home and that the effective property tax rate is $2.00 per $100 of full market value, the household would pay $320 in school property taxes, or 3.2 percent of its total household income as defined by the Bureau of the Census. In the view of the authors of this study, house value to income ratios for the higher income families as shown by the Bureau of the Census,

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4. Tables B-1 and B-2 show the local tax burden for education for 1970-71 for urban and rural areas, respectively, while Table B-3 shows the combined urban/rural tax burden. Tables B-4, B-5, and B-6 similarly show the local tax burden for education for fiscal year 1972.

5. For discussion of this approach, see George Peterson, "The Regressivity of the Residential Property Tax," Working Paper SP 1207-10, Washington, D.C., The Urban Institute, November 1972.

are too low, particularly in rapidly growing suburban areas. This tends to underestimate taxes paid by middle and upper income families.

For a given income group, the property tax is the tax weighted in accordance with the proportion of owner-occupied and renter-occupied units. The proportion of owners and renters within each income group is also based on data from the 1970 Census of Population and Housing. Within the same income group, the value of rented units is lower than the value of owner-occupied units. Additionally, lower income families are more likely to rent while higher income families reside in owner-occupied units.

The analysis undertaken for this study assumes all households are subject to full property tax payments, adjusted to the special assessment procedures for different types of real property and the inclusion of the homestead credit. In fact, many lower income households reside in public housing which may be tax exempt. The high tax burden for lower income families is due, in part, to a higher proportion of retired households in these income groups. The current rent income is low for these families but they own or rent housing of comparatively high value acquired during their earning years when their income was higher.

Real property taxes paid by industrial and commercial enterprises are also included in this analysis. The values derived reflect the amount of tax shifted forward to consumers both within and outside the state in the form of higher prices, and shifted backward to owners of capital in the form of reduced profits. It was assumed for purposes of the analysis that one-third of the tax is absorbed by owners of capital and two-thirds is shifted forward to the consumer.

The proportion of total real property in the State of Minnesota that is classified as industrial-commercial property is 23.7 percent. Since the

assumption is that part of the tax on this category of property is absorbed by its owners, the effect of taking commercial-industrial property taxes into account is to increase the tax burden of high income households. Thus, when these taxes are included, the tax burden for high income households is increased by 17.3 percent compared to an increase of only 12.8 percent in the tax burden for low income households. The percent of personal income taxed for education in the case of high income households shifts from 5.2 to 6.1 while that for low income households shifts from 9.4 to 10.6 percent with the inclusion of commercial-industrial property.

The overall regressive pattern of the property tax is not affected by this inclusion. Moreover, homeowners, particularly those in high income tax brackets, can offset a considerable part of the property tax by deducting their property tax payments from federal income taxes. It should be noted that federal tax offsets were excluded from this tax burden analysis.

Also included in the analysis of local property tax burdens is an analysis of the taxes imposed on agricultural land.[6] The proportion of total assessed real property that is comprised of agricultural land is 22.7 percent. In the tax burden analysis for rural income classes, the values for the agricultural land property are adjusted to reflect the proportion of farm households to total rural households. Adjustments are made in the analysis of the combined urban-rural tax burdens for the number of farm households as a proportion of total state household population. An

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6. This study does not examine the impact of vacant lots on the total burden represented by real property taxes. The proportion of assessed value of vacant lots of total assessed taxable real property is approximately 1.2 percent in Minnesota.

adjustment is also made to account for the difference in assessments for agricultural property. In addition, agricultural land values reflect the amount of tax imposed on "real" farm adjusted gross income, that is, Bureau of Labor Statistics data for adjusted gross income added to the amount of agricultural land property tax.

The impact of agricultural land taxes conforms to the overall regressive pattern of the real property tax, with low income households paying a disproportionate amount of their income for this tax. In the case of rural households, the impact of agricultural land taxes is shown to be substantial for all income classes and especially for households in the lowest income categories. Small households in the $3,000-$3,999 income class, for example, pay an average of 9.1 percent of their income through taxes on agricultural land alone. The extremely high burden is due to the large number of farm households in that income class, 68.1 percent. Only 10.5 percent of all farm households are in the $10,000-$15,000 income group.

The values computed for this study exclude any personal property taxes paid by homeowners. A number of other factors may also contribute to the highly regressive pattern shown by the use of Census of Housing data. These include the following: (1) Census values consider only current income rather than income over time. It has been shown that expenditures for housing are generally governed by their long term income expectations.[7] (2) The imputed income value of owner-occupied housing is not estimated. The inclusion of this imputed income would reduce the share of total income comprised of property taxes. In addition, the overall pattern would be

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7. Frank de Leeuw, "The Demand for Housing: A Review of Cross-Section Evidence," The Review of Economics and Statistics, February 1971.

slightly less regressive, since imputed income as a proportion of total income is highest among low income homeowners.

TABLE B-1
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

(Urban)
1970-71

Type of Tax	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES								
Sales & Use	1.0%	1.0%	1.1%	0.9%	0.9%	0.9%	0.9%	0.6%
Personal Income[1/]	0.0	0.8	1.7	2.4	3.2	3.3	4.0	5.3
Corporate Income Shifted Forward to Consumers	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.2
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2
Gross Earnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cigarettes and Tobacco Products	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.2
TOTAL STATE TAXES[2/]	3.0	4.0	4.8	5.3	6.0	5.7	6.3	7.2
TOTAL STATE REVENUES ALLOCATED TO EDUCATION[3/]	1.0	1.3	1.6	1.7	2.0	1.9	2.1	2.4
LOCAL TAXES								
Residential - Paid by Homeowners	8.1	5.7	4.7	3.9	3.4	2.6	2.2	1.4
Residential - Paid by Renters	8.3	5.8	4.6	4.1	3.5	2.9	2.5	1.1
Combined Residential	8.2	5.8	4.7	4.0	3.4	2.7	2.2	1.4
Commercial & Industrial Shifted Forward to Consumers	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.6
Commercial & Industrial Shifted Backward to Owners of Capital	0.4	0.4	0.3	0.5	0.3	0.1	0.1	0.5
TOTAL LOCAL TAXES	9.6	7.2	6.0	5.4	4.6	3.7	3.2	2.5
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	10.6%	8.5%	7.6%	7.1%	6.6%	5.6%	5.3%	4.9%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable tax credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular, they do not include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range school districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/32.8 percent of state tax receipts are allocated to elementary and secondary education.

TABLE B-2
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

(Rural)
1970-71

Type of Tax	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES								
Sales & Use	1.3%	1.1%	1.1%	1.1%	0.9%	0.9%	0.8%	0.5%
Personal Income[1/]	0.0	0.8	1.7	2.4	3.2	3.3	4.0	5.3
Corporate Income Shifted Forward to Consumers	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.2
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2
Gross Earnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cigarettes and Tobacco Products	0.8	0.7	0.6	0.6	0.4	0.4	0.2	0.1
TOTAL STATE TAXES[2/]	3.6	4.2	4.7	5.6	5.8	5.7	6.0	7.0
TOTAL STATE REVENUES ALLOCATED TO EDUCATION[3/]	1.2	1.4	1.5	1.8	1.9	1.9	2.0	2.3
LOCAL TAXES								
Residential - Paid by Homeowners[4/]	5.6	4.1	3.3	2.8	2.4	1.9	1.7	1.0
Residential - Paid by Renters	5.2	3.8	2.9	2.7	2.3	1.9	1.7	0.8
Combined Residential	5.4	4.0	3.2	2.8	2.4	1.9	1.7	1.0
Commercial & Industrial Shifted Forward to Consumers	1.2	1.0	1.0	1.0	0.9	0.9	0.9	0.5
Commercial & Industrial Shifted Backward to Owners of Capital	0.4	0.4	0.3	0.5	0.3	0.1	0.1	0.5
Agricultural Land[5/]	7.0	12.2	5.2	4.7	3.1	2.0	1.9	1.7
TOTAL LOCAL TAXES	14.0	17.6	9.7	9.0	6.7	4.9	4.6	3.7
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	15.2%	19.0%	11.2%	10.8%	8.6%	6.8%	6.6%	6.0%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable tax credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular they do not include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range school districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/32.8 percent of state tax receipts are allocated to elementary and secondary education.

4/Calculation of tax burden takes into account difference in property assessment between rural non-farm and rural farm owner occupied residential property.

5/A high tax burden is shown for the $3000-4000 income class because 68.1 percent of total rural households for that class are composed of farm households, compared to 10.5 percent in the $10,000-15,000 income class.

TABLE B-3
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

(Urban/Rural Combined)
1970-71

Type of Tax	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES								
Sales & Use	1.1%	1.0%	1.1%	1.0%	0.9%	0.9%	0.9%	0.6%
Personal Income[1]	0.0	0.8	1.7	2.1	3.2	3.3	4.0	5.3
Corporate Income Shifted Forward to Consumers	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.2
Gross Farnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Cigarettes and Tobacco Products	0.7	0.6	0.6	0.5	0.5	0.4	0.3	0.2
TOTAL STATE TAXES[2]	3.3	4.1	4.8	5.2	6.0	5.7	6.3	7.3
TOTAL STATE REVS. ALLOC. TO ED.[3]	1.1	1.4	1.6	1.7	2.0	1.9	2.1	2.4
LOCAL TAXES								
Residential - Paid by Homeowners	7.2	5.1	4.2	3.5	3.0	2.4	2.0	1.3
Residential - Paid by Renters	7.2	5.1	4.0	3.6	3.1	2.5	2.2	1.0
Combined Residential	7.2	5.1	4.2	3.5	3.0	2.4	2.0	1.3
Commercial & Industrial Shifted Forward to Consumers	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.6
Commercial & Industrial Shifted Backward to Owners of Capital	0.4	0.4	0.3	0.5	0.3	0.1	0.1	0.5
Agricultural Land[4]	2.3	4.0	1.7	1.6	1.0	0.7	0.6	0.6
TOTAL LOCAL TAXES	11.0	10.5	7.2	6.5	5.2	4.1	3.6	3.0
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	12.1%	11.9%	8.8%	8.2%	7.2%	6.0%	5.7%	5.4%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular they don't include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range School districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/32.8 percent of state tax receipts are allocated to elementary and secondary education.

4/A high tax burden is shown for the $3,000-4,000 income class because 68.1 percent of total rural households for that class are composed of farm households, compared to 10.5 percent in the $10,000-15,000 income class.

TABLE B-4
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

(Urban)

Type of Tax	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES (FY 1973)								
Sales & Use	1.3%	1.3%	1.4%	1.2%	1.2%	1.2%	1.2%	0.8%
Personal Income[1/]	0.0	1.1	2.1	2.8	3.7	3.8	4.5	5.1
Corporate Income Shifted Forward to Consumers	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.3
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.3	0.2	0.1	0.1	0.3
Gross Earnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Cigarettes and Tobacco Products	1.0	1.0	0.9	0.8	0.8	0.7	0.5	0.3
TOTAL STATE TAXES[2/]	3.9	5.2	6.0	6.6	7.3	7.0	7.5	9.0
TOTAL STATE REVENUES ALLOCATED TO EDUCATION[3/]	1.7	2.2	2.6	2.8	3.1	3.0	3.2	3.8
LOCAL TAXES (FY 1972)								
Residential - Paid by Homeowners	6.5	4.6	3.8	3.1	2.7	2.1	1.8	1.1
Residential - Paid by Renters	6.7	4.7	3.7	3.3	2.8	2.3	2.0	0.9
Combined Residential	6.6	4.7	3.8	3.2	2.7	2.2	1.8	1.1
Commercial & Industrial Shifted Forward to Consumers	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.5
Commercial & Industrial Shifted Backward to Owners of Capital	0.3	0.3	0.2	0.4	0.2	0.1	0.1	0.4
TOTAL LOCAL TAXES	7.7	5.8	4.8	4.3	3.6	3.0	2.6	2.0
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	9.4%	8.0%	7.4%	7.1%	6.7%	6.0%	5.8%	5.8%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable tax credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular they do not include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range school districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/42.6 percent of state tax receipts are allocated to elementary and secondary education.

TABLE B-5
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

Type of Tax	(Rural) $2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES (FY 1973)								
Sales & Use	1.7%	1.4%	1.4%	1.4%	1.2%	1.2%	1.1%	0.7%
Personal Income 1/	0.0	1.1	2.1	2.8	3.7	3.8	4.6	6.1
Corporate Income Shifted Forward to Consumers	0.7	0.5	0.6	0.6	0.6	0.5	0.4	0.3
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.3	0.2	0.1	0.1	0.3
Gross Earnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2
Cigarettes and Tobacco Products	1.3	1.1	0.9	0.9	0.7	0.6	0.3	0.1
TOTAL STATE TAXES 2/	4.7	5.3	6.0	7.0	7.2	6.8	7.1	8.2
TOTAL STATE REVENUES ALLOCATED TO EDUCATION 3/	2.0	2.3	2.6	3.0	3.1	2.9	3.0	3.5
LOCAL TAXES (FY 1972)								
Residential - Paid by Home-owners 4/	4.3	3.2	2.6	2.2	1.9	1.5	1.3	0.8
Residential - Paid by Renters	4.1	3.0	2.3	2.1	1.8	1.5	1.3	0.6
Combined Residential	4.2	3.1	2.5	2.2	1.9	1.5	1.3	0.8
Commercial & Industrial Shifted Forward to Consumers	1.0	0.8	0.8	0.8	0.7	0.7	0.7	0.4
Commercial & Industrial Shifted Backward to Owners of Capital	0.3	0.3	0.2	0.4	0.2	0.1	0.1	0.4
Agricultural Land 5/	5.3	9.1	3.9	3.5	2.3	1.5	1.4	1.3
TOTAL LOCAL TAXES	10.8	13.3	7.4	6.9	5.1	3.8	3.5	2.9
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	12.8%	15.6%	10.0%	9.9%	8.2%	6.7%	6.5%	6.4%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable tax credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular they do not include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range school districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/42.6 percent of state tax receipts are allocated to elementary and secondary education.

4/Calculation of tax burden takes into account difference in property assessment between rural non-farm and rural farm owner occupied residential property.

5/A high tax burden is shown for the $3000-4000 income class because 68.1 percent of total rural households for that class are composed of farm households, compared to 10.5 percent in the $10,000-15,000 income class.

TABLE B-6
STATE AND LOCAL TAX BURDEN FOR EDUCATION BY INCOME GROUP

(Urban/Rural Combined)

Type of Tax	$2000 2999	$3000 3999	$4000 4999	$5000 5999	$6000 7499	$7500 9999	$10,000 14,999	$15,000 & Over
STATE TAXES (FY 1973)								
Sales & Use	1.4%	1.3%	1.4%	[illegible]	1.2%	1.2%	1.2%	0.8%
Personal Income[1/]	0.0	1.1	2.1	2.8	3.7	3.8	4.5	6.4
Corporate Income Shifted Forward to Consumers	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.3
Corporate Income Shifted Backward to Owners of Capital	0.2	0.2	0.1	0.3	0.2	0.1	0.1	0.3
Gross Earnings Shifted Forward to Consumers	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1
Gross Earnings Shifted Backward to Owners of Capital	0.1	0.1	0.1	0.1	0.1	*	*	0.1
Insurance Gross Premiums	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2
Inheritance and Gift	0.2	0.4	0.2	0.3	0.2	0.1	0.1	0.2
Liquor and Beer	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Cigarettes and Tobacco Products	1.1	1.0	0.9	0.8	0.8	0.7	0.4	0.2
TOTAL STATE TAXES[2/]	4.3	5.3	6.1	6.8	7.3	7.0	7.4	8.8
TOTAL STATE REVENUES ALLOCATED TO EDUCATION[3/]	1.8	2.3	2.6	2.9	3.1	3.0	3.2	3.8
LOCAL TAXES (FY 1972)								
Residential - Paid by Homeowners	5.7	4.1	3.4	2.8	2.4	1.9	1.6	1.0
Residential - Paid by Renters	5.9	4.1	3.2	2.9	2.5	2.0	1.7	0.8
Combined Residential	5.8	4.1	3.3	2.8	2.4	2.0	1.6	1.0
Commercial & Industrial Shifted Forward to Consumers	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.5
Commercial & Industrial Shifted Backward to Owners of Capital	0.3	0.3	0.2	0.4	0.2	0.1	0.1	0.4
Agricultural Land[4/]	1.8	3.0	1.3	1.2	0.8	0.5	0.5	0.4
TOTAL LOCAL TAXES	8.8	8.2	5.6	5.1	4.1	3.3	2.9	2.3
TOTAL STATE & LOCAL TAXES ALLOCATED TO EDUCATION	10.6%	10.5%	8.2%	8.0%	7.2%	6.3%	6.1%	6.1%

*Under .05 percent.

1/Computation of personal income tax burdens excludes refundable credit to persons aged 65 and over who own or rent place of residence.

2/State taxes are defined to include major general revenue producing taxes. In particular they don't include taxes on mineral production, most of which are exported. In the case of taconite tax payments to Iron Range school districts, because of the high rate of tax exportation and the specific allocation of revenues to a small portion of the state's school districts, they are excluded from the tax burden analysis.

3/42.6 percent of state tax receipts are allocated to elementary and secondary education.

4/A high tax burden is shown for the $3,000-4,000 income class because 68.1 percent of total rural households for that class are composed of farm households, compared to 10.5 percent in the $10,000-15,000 income class.

APPENDIX C

METHODOLOGY FOR EQUALIZING QUANTITATIVE DIFFERENCES THAT AFFECT PER PUPIL EXPENDITURE DIFFERENCES

CLASSROOM TEACHERS

The method employed to equalize quantitative factors and thereby isolate differences due to price variation is one which makes the necessary adjustments so that teachers in the suburban and rural areas of Minnesota have characteristics identical to teachers in the central cities of St. Paul and Minneapolis. In this context, education and experience levels of teachers as well as the number of teachers in proportion to students are considered to be quantitative factors.

The initial step is to adjust for the impact of non-degree teachers on average salaries. Of all teachers in central cities, only 1.4 percent have less than a B.A. degree. In slow growth suburbs, only 1.5 percent of the total number of teachers have no degree, in fast growth suburbs, 1.1 percent. These differences are too minor to affect expenditures in the metropolitan area.

There is considerable difference between metropolitan and rural areas in the proportion of non-degree teachers, however. Small agricultural districts have 11.6 percent of their teachers, at an average salary of $7,756, in a non-degree status. This is 10.2 percent more than central cities. To equalize to the central city level of 1.4 percent, the number

of teachers receiving salaries of $8,319, which is the average for teachers with B.A. degrees in small agricultural districts, would be increased by 10.2 percent. This adjustment would increase the overall average salary of teachers in these districts by $65 per pupil. Similarly, if rural non-agricultural districts, which have a non-degree teacher population of 6.7 percent, were equalized to the central city level, the average salary expenditure in these districts would increase by $77 per pupil. Thus by raising non-degree teachers to the same salary level as teachers with bachelor's degrees, one of the quantitative factors has been controlled.

The second factor which must be controlled is years of teaching experience. The change in per pupil expenditures if all teachers with bachelor's degrees and master's degrees had the same average years of experience as those in central cities is determined.

There are two important steps in this process: (1) determining the average number of steps in salary schedules between the minimum salary figure and the maximum salary amount; (2) determining the percentage of teachers in each category of district who are presently earning at the maximum level. Once these data have been derived, certain assumptions must be made. It is assumed that step increases are on an annual basis. Further, it is assumed that with the average years of experience and the approximate standard deviation from the average, the proportion of teachers at each given experience level can be determined. Thus, there would be a certain proportion of teachers at the one year experience level, a certain proportion at the two year level, and so on until the total distribution is accounted for. In this manner, the proportion of the total teacher population that is already earning at the maximum level can be computed. This is a necessary calculation because those teachers earning at the maximum salary

level, by definition, cannot earn more. Therefore, their salaries cannot be incremented by the adjustment for experience levels.

Of all teachers holding B.A. degrees, approximately 48 percent of them are earning at the maximum level. Therefore, only 52 percent are involved in equalizing for average years' experience. For example, since the average years of experience for teachers in small agricultural districts is 9.3 years and that of central cities 10.7 years, 52 percent of the teachers in the small agricultural districts would therefore be raised to the central cities' level of 10.7 years. The teachers would receive an additional $368 per annum, and thus the average salaries for teachers with B.A. degrees in the small agricultural districts would rise from $8,319 to $8,510.

The same process is followed for teachers with M.A. degrees. Once this is accomplished, the total effect of experience on the average salaries of teachers with B.A. degrees and M.A. degrees can be calculated.

At this point, adjustments have been made for two of the quantitative factors which influence cost differentials--the differences in the percentages of non-degree teachers and the differences in the average experience levels of teachers. The next quantitative factor for which adjustments are made is the average educational level of degree-holding teachers. The central cities average 80 percent of their teachers with B.A. degrees and the remaining 20 percent with M.A. degrees or above. By adjusting the suburban and rural school districts to this ratio, it is possible to determine what impact differences in educational levels have on per pupil expenditure differentials for teachers.

Such an adjustment would have no effect on the slow growth suburban districts since these districts have teachers with B.A. and M.A. degrees in the same proportions as the central cities. Thus the impact of education levels on total cost differences between the central cities and slow growth suburban districts is zero. Fast growth suburban districts have a B.A. to M.A. ratio of 83 to 17. If this ratio were adjusted to the central city average level of 80 to 20, there would be an average per pupil increase in expenditures for teachers in fast growth suburbs amounting to $9 dollars.

The final adjustment which must be made for quantitative differences in educational resources involves the equalization of pupil-teacher ratios. The pupil-teacher ratios of the suburban and rural areas are assumed to be equal to that of the central cities, which average 21.2 pupils per teacher.

Once adjustments in the quantitative differences in educational resources have been made, the differences in expenditures between the central cities, their suburbs and the rural areas of the state that are due solely to differences in salary schedules can be determined.

When the non-classroom teacher instructional expenditures and non-instructional expenditures are included, the total equalized expenditures for each district type can be determined. Because of data limitations, however, the only adjustments that can be made are for differences in pupil-special education teacher ratios.